CRPL-F 96

IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
WASHINGTON, D. C.

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist..

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of D are counted as equal to or greater than the upper limit of the recorder.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic. This practice represents a change from that listed in issues previous to CRPL-F78.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number							
	1952	1951	1950	1949	1948	1947	1946	1945
December		53	86	108	114	126	85	38
November		52	87	112	115	124	83	36
October		52	90	114	116	119	81	23
September		54	91	115	117	121	79	22
August		57	96	111	123	122	77	20
July	51	60	101	108	125	116	73	
June	52	63	103	108	129	112	67	
May	52	68	102	108	130	109	67	
April	52	74	101	109	133	107	62	
March	52	78	103	111	133	105	51	
February	51	82	103	113	133	90	46	
January	53	85	105	112	130	88	42	

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 57 and figures 1 to 114 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina
Decepcion I.

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
Brisbane, Australia
Hobart, Tasmania
Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
Watheroo, Western Australia

University of Graz:
    Graz, Austria

British Department of Scientific and Industrial Research, Radio Research Board:
    Falkland Is.
    Inverness, Scotland
    Singapore, British Malaya
    Slough, England

Radio Wave Research Laboratories, National Taiman University, Taipeh, Formosa, China:
    Formosa, China

French Ministry of Naval Armaments (Section for Scientific Research):
    Dakar, French West Africa
    Fribourg, Germany
    Tananarive, Madagascar

National Laboratory of Radio-Electricity (French Ionospheric Bureau):
    Domont, France
    Poitiers, France
    Terre Adelie

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
    Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
    De Bilt, Holland

Icelandic Post and Telegraph Administration:
    Reykjavik, Iceland

All India Radio (Government of India), New Delhi, India:
    Bombay, India
    Delhi, India
    Madras, India
    Tiruchy (Tiruchirapalli), India

Indian Council of Scientific and Industrial Research, Radio Research Committee:
    Calcutta, India

Radio Regulatory Commission, Tokyo, Japan:
    Akita, Japan
    Tokyo (Kokubunji), Japan
    Wakkanai, Japan
    Yamagawa, Japan

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
    Oslo, Norway
    Tromso, Norway

South African Council for Scientific and Industrial Research:
    Capetown, Union of South Africa
    Johannesburg, Union of South Africa
    Nairobi, Kenya (East African Meteorological Department)

Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, Sweden:
- Kiruna, Sweden

Research Institute of National Defence, Stockholm, Sweden:
- Upsala, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
- Schwarzenburg, Switzerland

United States Army Signal Corps:
- Adak, Alaska
- Okinawa I.
- White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
- Anchorage, Alaska
- Batavia, Ohio (mobile unit)
- Baton Rouge, Louisiana (Louisiana State University)
- Maui, Hawaii
- Narsarssuak, Greenland
- Panama Canal Zone
- Puerto Rico, W. I.
- San Francisco, California (Stanford University)
- Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 58 to 69 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

IONOSPHERIC STORMINESS AT WASHINGTON, D.C.

Table 70 presents ionosphere character figures for Washington, D. C., during July 1952, as determined by the criteria given in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, geomagnetic K-figures, which are usually covariant with them.

RADIO PROPAGATION QUALITY FIGURES

Table 71a gives the radio propagation quality figures (North Atlantic area) for June 1952.

In addition to the radio propagation quality figures for 00 to 12 and 12 to 24 hours UT (Universal Time or GCT) for each day, the table in this report lists some of the CRPL forecasts and warnings for North Atlantic paths for the same periods of time: (1) radio disturbance warnings broadcast on WWV, (2) short-term forecasts, issued every six hours for a 12-hour period, (3) advance forecasts (semiweekly CRPL-J reports) issued from one to 25 days in advance. The table also gives half-day averages of geomagnetic K-indices measured by the Cheltenham Magnetic Observatory of the U. S. Coast and Geodetic Survey. Part b of the table illustrates the comparison between the short-term forecasts and the quality figures. The forecasts are plotted approximately at the time of issue, and they are intended to represent conditions in the 12-hour period following. The figure also illustrates the overall outcome of the advance forecasts, issued one to three or four days ahead, and in comparison is shown the result if these same forecasts were issued at random during the month.

The radio propagation quality figures are prepared from radio traffic data reported to CRPL by a method similar to that described in IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," now out of print. Beginning with the recalculated figures for January 1952, only reports of radio transmission on North Atlantic paths closely approximating New York-London are included in the estimation of quality. Observations of selected ionospheric characteristics, even though strongly correlated with radio transmission quality, and traffic reports for paths such as New York-Stockholm or New York-Tangier, previously included in the quality-figure determination with low weight, have been left out of the present calculations inasmuch as a sufficient number of homogeneous reports are now available.

The original reports are submitted on various scales and for various time intervals. The observations for each Greenwich half day are averaged on the quality scale of the original reports. These half-day indices are then adjusted to the 1 to 9 quality-figure scale. The conversion table was prepared by comparing the distribution of these indices for at least four months, usually a year, with a master distribution determined from analysis of the reports made on the 1 to 9 quality-figure scale. A report whose distribution is the same as the master is thereby converted linearly to the Q-figure scale. Each report is given a statistical weight which is the reciprocal of the departure from linearity. Each half-daily radio propagation quality figure, beginning January 1948, is the weighted mean of the reports received for that period.

These quality figures are, in effect, a consensus of reported radio propagation conditions in the North Atlantic area. The reasons for low quality are not necessarily known and may not be limited to ionospheric storminess. For instance, low quality may result from improper frequency usage for the path and time of day. Although, wherever it is reported,

frequency usage is included in the rating of reports, it must often be an assumption that the reports refer to optimum working frequencies. It is more difficult to eliminate from the indices conditions of low quality because of multipath, interference, etc. These considerations should be taken into account in interpreting research correlations between the Q-figures and solar, auroral, geomagnetic or similar indices.

In the comparison of forecasts and quality figures the following conventions apply: Radio disturbance warnings -- direct comparison by half days where N is scored 0 when $Q \geqslant 5$ and M when $Q \leqslant 4$; U is scored 0 when $Q \geqslant 6$, H when $Q=5$ or 4, and (M) when $Q \leqslant 3$; W is scored 0 when $Q \geqslant 5$ and H when $Q \leqslant 4$. If a warning is broadcast for a quarter day, the more disturbed grade is used in the comparison. Short-term forecasts -- direct comparison by half days, both forecast and quality figure being on the Q-scale. Only the forecasts for 00-12 and 12-24 hours are evaluated; the results for the intervening forecasts should be similar. Advance forecasts -- the whole-day forecast, on the Q scale, is compared with a whole-day index derived from the two half-daily quality figures, when different, as follows: if either half-day Q-figure is 4 or less, the whole-day index is the lower of the two; if both half-day Q-figures are 6 or more, the whole-day index is the higher of the two; if the 00-12 Q-figure is 5 and the other is greater than 5, the whole-day index is the higher; if the 00-12 Q-figure is greater than 5 and the other is 5, the whole-day index is 5.

Note. The North Pacific quality figures which were published through October 1951 have been temporarily discontinued. Since the establishment of the North Pacific Radio Warning Service at Anchorage, Alaska, a larger number of reports are being received than were previously available in Washington. The preparation of the quality figures will be resumed when sufficient data have been accumulated for determination of conversion tables for these new reports.

OBSERVATIONS OF THE SOLAR CORONA

Tables 72 through 74 give the observations of the solar corona during July 1952, obtained at Climax, Colorado, by the High Altitude Observatory of Harvard University and the University of Colorado. Tables 75 through 77 list the coronal observations obtained at Sacramento Peak, New Mexico, during July 1952, derived by the High Altitude Observatory from spectrograms taken by Harvard University as a part of its performance of an Air Materiel Command Research and Development Contract adminstered by the Air Force Cambridge Research Laboratories. The data are listed separately for east and west limbs at 5-degree intervals of position angle north and south of the Solar Equator at the limb. The time of observation is given to the nearest tenth of a day, GCT.

Table 72 gives the intensities of the green (5303A) line of the emission spectrum of the solar corona; table 73 gives similarly the intensities of the first red (6374A) coronal line; and table 74 the intensities of the second red (6702A) coronal line; all observed at Climax in July 1952.

Table 75 gives the intensities of the green (5303A) coronal line; table 76, the intensities of the first red (6374A) coronal line; and table 77, the intensities of the second red (6702A) coronal line; all observed at Sacramento Peak in July 1952.

The following symbols are used in tables 72 through 77: a, observation of low weight; -, corona not visible; and X, position angle not included in plate estimates.

RELATIVE SUNSPOT NUMBERS

Table 78 lists the daily provisional Zürich relative sunspot number, R_Z, as communicated by the Swiss Federal Observatory. Table 79 continues the new series of American relative sunspot numbers, R_A'. Beginning with 1951, the observations collected by the Solar Division, AAVSO, have been reduced according to a new procedure, such that only high quality observations of experienced observers are combined into R_A'. Observatory coefficients for each of the 28 selected observers were recomputed on data for 1948-1950, years when there was a wide range of solar activity. Otherwise, the procedure is that outlined in Publication of the Astronomical Society of the Pacific, 61, 13, 1949. The scale of the American numbers in 1951 differs from that of the reports for earlier years because of these changes, and the new series is designated R_A' rather than R_A. The American relative sunspot numbers appear monthly in these pages as communicated by the Solar Division.

OBSERVATIONS OF SOLAR FLARES

Table 80 gives the preliminary record of solar flares reported to the CRPL. These reports are communicated on a rapid schedule at the sacrifice of detailed accuracy. Definitive and complete records are published later in the Quarterly Bulletin of Solar Activity, I.A.U., in various observatory publications, and elsewhere. The present listing serves to identify and roughly describe the phenomena observed. Details should be sought from the reporting observatory.

Reporting directly to the CRPL are the following observatories: Mt. Wilson, McMath-Hulbert, U. S. Naval, Wendelstein, Kanzel and High Altitude at Sacramento Peak, New Mexico. The remainder report to Meudon (Paris), and the data are taken from the Paris-URSIgram broadcast, monitored fairly regularly by the CRPL. The data on solar flares reported from Sacramento Peak, New Mexico, communicated by the High Altitude Observatory at Boulder, Colorado, are provided by Harvard University as the result of work undertaken on an Air Materiel Command Research and Development Contract administered by the Air Force Cambridge Research Laboratories.

The table lists for each flare the reporting observatory, date, times of beginning and ending of observation, duration (when known), total area (corrected for foreshortening), and heliographic coordinates. For the maximum phase of the flare is given the time, intensity, area relative to the total area, and the importance. The column "SID observed" is to indicate when a sudden ionosphere disturbance, noted elsewhere in these reports, occurred at the time of a flare. Times are in Universal Time (GCT).

INDICES OF GEOMAGNETIC ACTIVITY

Table 81 lists various indices of geomagnetic activity based on data from magnetic observatories widely distributed throughout the world. The indices are: (1) preliminary international character-figures, C; (2) geomagnetic planetary three-hour-range indices, Kp; (3) magnetically selected quiet and disturbed days.

The C-figure is the arithmetic mean of the subjective classification by all observatories of each day's magnetic activity on a scale of 0 (quiet) to 2 (storm). The magnetically quiet and disturbed days are selected by the international scheme outlined on pages 219-227 in the December 1943 issue of Terrestrial Magnetism and Atmospheric Electricity. The details of the currently used method follow. For each day of a month, its geomagnetic activity is assigned by weighting equally the following four criteria: (1) C; (2) the sum of the eight Kp's; (3) the greatest Kp; and (4) the sums of the squares of the eight Kp's.

Kp is the mean standardized K-index from 11 observatories between geomagnetic latitudes 47 and 63 degrees. The scale is 0 (very quiet) to 9 (extremely disturbed), expressed in thirds of a unit, e.g. 5- is 4 2/3, 5o is 5 0/3, and 5+ is 5 1/3. This planetary index is designed to measure solar particle-radiation by its magnetic effects, specifically to meet the needs of research workers in the ionospheric field. A complete description of Kp has appeared in Bulletin 12b, "Geomagnetic Indices C and K, 1948," published in Washington, D. C., 1949, by the Association of Terrestrial Magnetism and Electricity, International Union of Geodesy and Geophysics. Tables of Kp for 1945-48 are in Bulletin 12b; for 1940-44

and 1949, in these CRPL-F reports, F65-67; for 1950, monthly in F68 and following issues. Current tables are also published quarterly in the Journal of Geophysical Research along with data on sudden commencements (sc) and solar flare effects (sfe).

The Committee on Characterization of Magnetic Disturbance, ATME, IUGG, has kindly supplied this table. The Meteorological Office, De Bilt, Holland, collects the data and compiles C and selected days. The Chairman of the Committee computes the planetary index. At the meeting of ATME held in Brussels in August 1951, it was decided that the computation of Kw would be discontinued after the month of December 1951 since Kp is available from January 1, 1940. Kw, therefore, no longer appears in these reports.

SUDDEN IONOSPHERE DISTURBANCES

Tables 82 and 83 list respectively the sudden ionosphere disturbances observed at Ft. Belvoir, Virginia, July 1952; and in England, June 1952.

TABLES OF IONOSPHERIC DATA

Table 1

Washington, D. C. (38.7°N, 77.1°W) — July 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.7					3.0	3.0
01	270	3.2					2.7	3.0
02	270	2.8					2.5	3.0
03	270	2.4					3.0	3.0
04	290	2.2					4.0	2.9
05	270	2.7	---	---	120	---	3.0	3.1
06	(320)	3.6	220	3.3	110	2.0	3.6	3.2
07	380	4.2	220	3.7	110	2.5	4.2	2.9
08	390	4.6	200	3.9	100	2.8	4.7	2.9
09	380	4.9	200	4.1	100	3.0	5.0	3.0
10	380	5.0	200	4.2	100	3.2	5.6	3.0
11	380	5.1	190	4.3	100	3.3	5.5	2.9
12	440	5.0	190	4.4	100	3.4	5.3	2.7
13	390	5.2	200	4.4	100	3.3	4.6	2.9
14	370	5.4	200	4.3	100	3.3	4.4	2.9
15	380	5.3	200	4.2	100	3.2	4.6	2.9
16	350	5.2	210	4.1	110	3.0	4.5	2.9
17	330	5.5	220	3.8	110	2.7	3.9	3.0
18	290	5.6	230	3.4	110	2.3	4.1	3.1
19	260	5.8	240	---	120	---	3.7	3.2
20	240	5.8					3.3	3.2
21	240	5.1					3.5	3.1
22	250	4.6					2.7	3.0
23	260	4.1					2.0	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Tromso, Norway (69.7°N, 19.0°E) — June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	350	4.1	---	---	---	---	4.0	2.8
01	320	4.4	---	---	---	---	4.1	2.8
02	360	4.4	290	3.0	---	---	3.7	2.8
03	350	4.5	260	3.2	100	2.0	4.0	2.8
04	375	4.3	240	3.4	100	2.2	3.2	2.8
05	400	4.6	235	3.6	100	2.4	3.0	2.8
06	400	4.6	240	3.8	100	2.5	3.0	2.8
07	410	4.6	230	3.9	100	2.6	3.0	2.8
08	410	4.8	235	4.0	100	2.7	3.0	2.8
09	400	5.0	210	4.1	100	2.8	3.0	2.8
10	385	5.0	210	4.2	100	2.8	3.0	2.8
11	400	4.9	210	4.2	110	2.9	3.0	2.8
12	400	5.0	210	4.2	100	2.9	3.0	2.8
13	410	4.9	215	4.2	100	2.9		2.8
14	395	4.8	215	4.1	100	2.8		2.9
15	410	4.7	210	4.1	100	2.7	3.0	2.8
16	360	4.8	225	4.0	100	2.6	3.1	3.0
17	360	4.8	230	3.9	100	2.5	3.0	3.0
18	330	4.7	240	3.8	105	2.3	3.2	3.0
19	315	4.6	240	3.6	100	2.2	3.2	3.0
20	315	4.3	270	---	110	2.0	3.2	3.0
21	340	4.4	280	---	110	(1.8)	4.0	2.9
22	(330)	4.2	---	---	---	---	4.0	2.9
23	(350)	4.2	---	---	---	---	3.7	2.9

Time: 15.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Anchorage, Alaska (61.2°N, 149.9°W) — June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.2						3.0
01	295	2.8					2.0	3.1
02	300	3.0					3.7	3.1
03	340	3.6	270	2.0	110	1.6	2.9	3.0
04	370	3.9	240	3.0	120	1.7	2.5	2.9
05	380	4.2	230	3.3	110	2.1	3.3	2.9
06	390	4.5	220	3.5	100	2.3	2.5	2.8
07	410	4.5	200	3.7	100	2.6		2.8
08	460	4.6	200	3.8	100	2.8		2.7
09	400	4.6	200	4.0	100	2.8		2.8
10	430	4.5	200	4.0	100	3.0		2.7
11	480	4.6	200	4.1	100	3.0		2.7
12	490	4.5	200	4.2	100	3.0	3.4	2.6
13	450	4.7	200	4.2	100	3.0		2.8
14	480	4.6	200	4.1	100	2.9		2.7
15	420	4.7	200	4.1	100	2.9		2.8
16	410	4.7	210	4.0	100	2.8		2.9
17	370	4.7	220	3.8	100	2.6		3.0
18	340	4.7	230	3.7	110	2.4		3.1
19	300	4.7	230	3.4	110	2.2	3.8	3.2
20	270	4.7	240	---	120	1.8	3.8	3.3
21	260	4.6	---	---	---	---	3.8	3.3
22	260	3.9					3.6	3.2
23	270	3.4					3.4	3.1

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 4

Narsarssuak, Greenland (61.2°N, 45.4°W) — June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(3.7)					5.4	(2.5)
01	(410)	(4.0)					5.0	(2.5)
02	(430)	(3.7)					4.5	(2.6)
03	(460)	(3.6)					4.0	(2.6)
04	380	(3.8)					4.8	(2.7)
05	(440)	(3.9)	320	---	---	---	5.0	(2.6)
06	(500)	(4.1)	290	3.7	---	---	4.0	(2.5)
07	(500)	(4.4)	280	3.8	120	2.5	4.5	2.6
08	(460)	(4.6)	270	3.9	120	2.7	3.3	2.7
09	480	(4.6)	280	4.0	120	2.9	3.1	(2.6)
10	550	(4.6)	270	4.0	120	3.0		(2.5)
11	540	4.7	270	4.0	120	3.0		2.4
12	(550)	(4.7)	270	4.1	120	3.0		(2.4)
13	520	4.9	270	4.0	120	3.0		(2.4)
14	500	4.8	280	4.0	120	3.0		(2.5)
15	490	(4.8)	270	4.0	120	3.0		(2.5)
16	(480)	(4.8)	300	4.0	120	2.9	4.0	(2.5)
17	(490)	(4.6)	320	3.9	120	(2.6)	4.0	(2.5)
18	(440)	(4.4)	(320)	3.8	130	2.5	4.9	(2.6)
19	(390)	(4.4)	(320)	(3.3)	---	---	4.6	(2.6)
20	(400)	(4.2)	---	---	---	---	5.4	(2.6)
21	(340)	(4.0)					6.6	(2.7)
22	(360)	(3.8)					7.0	(2.6)
23	(380)	(3.7)					6.8	(2.5)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 5

Oslo, Norway (60.0°N, 11.1°E) — June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	4.2					2.9	2.9
01	265	4.2					3.1	2.9
02	270	3.8					3.1	3.0
03	270	3.8	---	---	---	E	3.2	2.9
04	335	4.0	250	2.8	125	1.4	3.2	2.9
05	395	4.2	230	3.3	115	1.9	3.5	2.9
06	380	4.5	225	3.6	110	2.2	3.5	2.8
07	380	4.6	210	3.8	110	2.5	3.5	2.8
08	405	4.7	210	4.0	105	2.6	3.5	2.8
09	360	5.2	210	4.2	105	2.8	3.9	2.9
10	360	5.2	210	4.2	105	3.0	4.2	2.9
11	415	5.0	205	4.3	105	3.0	3.7	2.8
12	400	5.3	205	4.3	105	3.1	4.2	2.9
13	400	5.1	210	4.4	105	3.1	3.7	2.8
14	390	5.1	210	4.4	105	3.0		2.9
15	365	5.1	210	4.2	105	3.0		2.9
16	375	5.0	215	4.2	110	2.8	3.2	2.9
17	340	5.2	215	4.0	110	2.6	3.4	3.0
18	315	5.2	225	3.8	115	2.3	3.4	3.0
19	290	5.2	230	3.5	115	2.0	3.6	3.1
20	265	5.2	245	2.9	135	1.7	3.4	3.1
21	250	5.0	---	---	---	E	2.6	3.0
22	255	4.6			---	E		3.0
23	265	4.5						3.0

Time: 15.0°E.
Sweep: 1.3 Mc to 14.0 Mc in 8 minutes, automatic operation.

Table 6

Upsala, Sweden (59.8°N, 17.6°E) — June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	3.8					2.5	2.9
01	270	3.6					2.8	2.8
02	280	3.5			---	E	3.6	2.8
03	305	3.7	265	2.6	---	E	4.2	2.8
04	370	3.9	240	3.1	125	1.7	4.2	2.9
05	365	4.2	225	3.5	115	2.0	5.0	2.9
06	400	4.5	220	3.7	110	2.3	5.8	2.8
07	420	4.6	215	3.9	110	2.6	5.3	2.8
08	400	4.8	215	4.0	105	2.8	5.4	2.8
09	380	5.2	210	4.1	105	2.9	4.8	2.9
10	375	5.1	210	4.2	105	3.0	5.4	2.9
11	395	5.0	205	4.3	105	3.0	5.7	2.8
12	385	5.1	210	4.3	105	3.0	5.7	2.9
13	410	5.0	205	4.3	105	3.0	5.6	2.9
14	385	5.2	210	4.3	105	3.0	4.9	2.9
15	355	5.0	210	4.2	105	2.9	4.5	3.0
16	360	4.9	215	4.0	105	2.8	4.2	2.9
17	335	5.1	220	3.9	110	2.5	4.4	3.0
18	310	5.0	230	3.6	110	2.2	3.8	3.0
19	280	5.0	235	3.3	120	1.9	4.3	3.0
20	260	5.0	255	2.9	---	E	3.3	3.0
21	260	4.9			---	E	3.5	3.0
22	260	4.7					2.2	2.9
23	265	4.4					2.5	2.9

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 7

Adak, Alaska (51.9°N, 176.6°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	(4.3)					2.4	(2.9)
01	280	4.1					2.3	2.8
02	280	3.6						2.8
03	300	3.4			---	---	2.0	2.8
04	390	3.8	260	2.7	130	1.4	2.2	2.7
05	410	4.2	240	3.3	120	2.0	2.8	2.7
06	390	4.6	240	3.6	110	2.4	4.0	2.8
07	390	4.8	230	3.8	110	2.7	4.0	2.8
08	400	5.0	220	4.0	110	2.9	5.5	2.8
09	440	4.7	210	4.1	110	3.0	6.4	2.7
10	470	4.8	210	4.2	110	(3.2)	6.2	2.6
11	430	4.9	210	4.3	110	3.2	6.2	2.8
12	430	4.9	210	4.2	110	(3.1)	5.0	2.6
13	420	5.0	210	4.2	110	(3.1)	5.0	2.8
14	410	4.9	210	4.2	110	3.1	4.2	2.8
15	400	4.8	210	4.1	110	3.0	4.0	2.8
16	400	4.7	220	4.0	110	2.8	3.7	2.8
17	360	5.0	230	3.8	110	2.6	3.8	2.9
18	320	5.0	240	3.6	110	2.2	4.7	3.0
19	300	5.2	250	---	120	1.8	3.8	3.0
20	260	5.4	---	---	---	E	4.1	3.0
21	270	5.8					3.9	3.0
22	260	5.5					3.8	3.0
23	270	4.8					2.8	2.9

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 8

Graz, Austria (47.1°N, 15.5°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	295	4.4					5.0	
01	290	4.2					4.4	
02	290	4.0					3.9	
03	290	3.9					3.9	
04	280	3.9					4.0	
05	310	4.2		3.1			3.0	
06	290	5.0	200	3.7			3.7	
07	290	5.5	200	4.0		2.6	4.4	
08	300	5.8	200	4.1	100	3.0	4.4	
09	305	5.9	205	4.2	100	3.0	5.0	
10	300	6.1	200	(4.5)	105	3.3	5.0	
11	---	(5.9)	200	4.6	100	3.4	5.6	
12	---	(6.5)	---	4.7	110	3.4	5.0	
13	330	5.8	200	4.6	110	3.5	4.0	
14	320	5.9	200	4.4	100	3.4	4.4	
15	310	5.9	200	4.4	100	3.1	4.9	
16	300	5.6	200	4.1	100	3.0	5.0	
17	300	5.8	210	4.0		2.7	5.5	
18	280	6.0	225	3.6			4.0	
19	250	6.4		(3.4)			4.3	
20	250	6.7					4.2	
21	260	6.2					4.0	
22	255	5.8					3.9	
23	270	5.0					3.9	

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 9

Batavia, Ohio (39.1°N, 84.1°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	3.7						2.9
01	(280)	3.5					3.2	2.9
02	(280)	3.1					3.0	2.9
03	(280)	2.8					3.6	3.0
04	(290)	2.3					4.0	2.9
05	(290)	2.6					4.0	3.0
06	(300)	3.7	230	3.0	120	(1.9)	4.7	3.1
07	420	4.3	210	3.7	110	2.4	4.8	2.7
08	410	4.6	200	3.8	100	2.7	5.2	2.8
09	400	4.8	200	4.1	100	3.0	5.4	2.8
10	420	5.0	200	4.2	100	3.1	5.5	2.7
11	420	5.0	190	4.3	100	3.2	4.7	2.8
12	420	5.2	190	4.4	100	3.4	5.0	2.8
13	400	5.4	200	4.4	100	3.4	5.7	2.8
14	380	5.6	200	4.3	100	3.3	5.4	2.8
15	360	5.4	200	4.3	100	3.2	4.5	2.9
16	360	5.3	200	4.2	100	3.0	4.7	2.9
17	340	5.4	210	4.0	100	2.8	3.6	3.0
18	300	5.6	210	3.7	110	2.5		3.0
19	270	5.6	230	---	120	2.0	3.3	3.1
20	240	5.6					3.7	3.1
21	240	5.5					3.8	3.0
22	250	4.8					3.7	3.0
23	(260)	4.2					3.3	2.9

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds. Mobile unit.

Table 10

San Francisco, California (37.4°N, 122.2°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.9					4.2	2.8
01	280	3.8					3.6	2.8
02	280	3.6					2.8	2.8
03	270	3.4					2.5	2.9
04	280	3.2						2.8
05	300	3.4	260	2.5			2.6	2.9
06	390	3.9	230	3.4	---	2.0	2.9	2.8
07	370	4.5	220	3.8	110	2.6	3.8	2.9
08	380	5.0	220	4.0	110	2.9	4.4	2.8
09	360	5.6	200	4.2	110	3.1	5.1	2.8
10	370	5.6	200	4.3	110	3.2	5.1	2.8
11	380	5.9	200	(4.4)	110	3.3	5.3	2.9
12	390	5.8	190	(4.4)	110	3.4	5.2	2.8
13	370	6.0	200	4.5	110	3.3	4.9	2.9
14	350	6.0	220	(4.4)	110	3.3	4.0	3.0
15	350	5.7	220	4.2	110	3.2	4.5	2.9
16	360	5.4	230	4.2	110	(3.0)	4.0	2.9
17	340	5.6	230	3.9	110	2.8	4.0	3.0
18	310	5.6	240	3.6	120	2.3	4.5	3.0
19	270	5.8	---	---			4.4	3.1
20	240	6.2					4.4	3.1
21	240	5.5					4.2	3.1
22	240	4.7					3.5	3.0
23	280	4.3					4.0	2.9

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 11

White Sands, New Mexico (32.3°N, 106.5°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.2					3.6	2.9
01	280	3.9					3.2	3.0
02	270	3.5					3.0	3.0
03	260	3.3					3.0	3.0
04	270	3.2					2.6	3.0
05	260	3.3	270	---	---	---	1.7	3.1
06	280	4.2	230	3.3	110	1.9	3.4	3.1
07	360	4.7	220	3.8	100	2.5	4.0	2.9
08	360	5.1	210	4.0	100	2.8	4.4	3.0
09	370	5.3	210	4.2	100	3.1	5.1	3.0
10	400	5.4	200	4.3	100	3.2	4.2	2.8
11	380	5.8	210	4.3	100	3.2	4.4	2.8
12	380	5.7	220	4.4	100	3.3	4.6	2.8
13	370	5.9	200	4.3	100	3.2	4.1	2.9
14	370	6.0	210	4.3	100	3.2	3.6	2.8
15	360	6.2	210	4.2	100	3.0	3.3	3.0
16	330	5.9	220	4.1	100	2.8	3.6	3.0
17	300	6.0	220	3.8	100	2.5	3.9	3.1
18	290	6.0	230	3.4	110	2.1	3.8	3.1
19	250	6.2	---	---	---	---	4.0	3.1
20	240	6.5					3.7	3.2
21	240	5.2					4.0	3.1
22	250	4.5					3.9	3.1
23	280	4.1					3.7	3.0

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 12

Baton Rouge, Louisiana (30.5°N, 91.2°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.0					3.2	2.9
01	310	3.8					3.5	2.9
02	300	3.6					4.0	3.0
03	300	3.3					3.2	2.9
04	300	3.1					3.0	2.9
05	290	3.3					2.7	3.0
06	310	4.2	260	---	130	2.0	3.6	3.0
07	370	4.7	250	3.7	120	2.4	4.3	3.0
08	420	5.0	230	4.0	120	2.8	7.1	2.8
09	420	5.4	220	4.2	120	3.0	6.0	2.7
10	400	5.7	220	4.3	120	3.1	6.1	2.7
11	420	6.0	220	4.4	120	3.3	6.0	2.7
12	[illegible]	6.3	220	4.4	120	3.4	6.2	2.8
13	400	6.3	230	4.4	120	3.3	5.8	2.7
14	380	6.4	240	4.4	120	3.3	5.8	2.8
15	380	6.3	240	4.2	120	3.2	5.1	2.8
16	360	6.3	240	4.1	120	3.0	4.5	2.9
17	340	6.0	250	3.9	120	2.6	5.1	3.0
18	300	6.4	250	3.3	130	2.1	5.0	3.0
19	280	6.8					5.0	3.0
20	260	6.2					3.8	3.0
21	270	5.3					3.5	3.0
22	290	4.5					3.6	2.9
23	310	4.1					3.2	2.8

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 13

Okinawa, I. (26.3°N, 127.8°E) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(6.2)					5.4	(2.7)
01	300	(6.1)					5.0	---
02	290	(6.0)					5.4	(2.9)
03	300	(5.2)					4.5	(3.0)
04	280	(4.3)					4.0	(3.0)
05	260	(4.0)					3.8	(3.0)
06	280	5.0	260	---	120	2.0	4.2	3.1
07	300	5.9	250	---	120	(2.6)	5.8	3.2
08	320	5.8	240	4.3	120	3.0	7.8	3.1
09	360	5.7	---	4.6	120	3.2	8.0	2.9
10	400	6.1	---	4.6	120	3.4	8.5	2.7
11	430	6.8	---	4.6	120	3.5	9.0	2.6
12	420	7.4	230	4.6	120	3.5	8.6	2.6
13	420	8.0	240	4.5	120	3.4	6.4	2.6
14	400	8.6	240	4.5	120	(3.3)	6.9	2.6
15	370	9.3	260	4.4	120	3.2	6.1	2.7
16	350	9.5	260	4.2	120	(2.9)	6.2	2.8
17	320	9.2	250	3.9	120	2.5	5.8	2.9
18	300	9.0	270	---	---	---	5.2	3.0
19	270	8.2					5.9	3.0
20	(300)	6.4					5.0	2.8
21	(330)	6.0					4.8	2.6
22	350	(5.8)					4.6	(2.6)
23	360	(6.2)					4.9	---

Time: 127.5°E.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 14

Maui, Hawaii (20.8°N, 156.5°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	5.6					3.4	2.8
01	280	6.1					3.2	3.0
02	270	5.4					3.6	3.0
03	280	5.2					3.2	2.9
04	290	4.7					2.8	(3.0)
05	260	4.0					2.0	2.9
06	280	4.4	260	---	140	1.6	2.4	3.1
07	320	5.2	240	3.8	120	2.2	3.8	3.0
08	360	5.6	220	4.0	120	2.8	4.3	2.8
09	390	6.0	220	4.3	120	3.1	4.5	2.6
10	470	5.8	210	4.4	110	3.3	6.6	2.5
11	460	6.6	220	4.4	110	3.4	5.2	2.5
12	410	7.8	220	4.4	110	3.5	4.6	2.6
13	390	8.6	220	4.4	120	3.5	4.5	2.7
14	370	9.1	230	4.4	120	3.4	4.4	2.7
15	350	9.4	230	4.3	120	3.3	4.4	2.8
16	340	9.5	220	4.2	120	3.1	4.3	2.8
17	310	9.9	240	4.0	120	2.7	4.4	2.9
18	280	9.6	240	(3.6)	120	2.1	3.6	3.0
19	260	8.9	---	---	---	---	3.1	3.0
20	260	7.9					3.1	3.0
21	260	7.0					3.0	2.9
22	280	6.8					3.2	2.8
23	300	6.2					2.2	2.8

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 15

Puerto Rico, W.I. (18.5°N, 67.2°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.8					2.5	2.9
01	260	6.0					3.0	(3.0)
02	240	5.6					2.6	3.2
03	230	4.9					2.2	3.1
04	240	4.6					2.4	3.1
05	260	4.2					2.3	3.0
06	240	4.2	240	---	110	---	3.0	3.2
07	270	5.2	220	(3.4)	100	---	4.2	3.4
08	290	5.8	210	4.1	(100)	2.6	4.5	3.1
09	330	6.4	200	4.2	100	3.0	4.8	3.0
10	350	6.5	200	4.4	100	3.2	5.4	3.0
11	370	7.1	200	4.5	100	3.4	4.6	2.8
12	340	8.2	200	4.5	100	3.5	5.0	2.8
13	330	8.9	210	4.5	100	(3.5)	4.9	2.9
14	310	9.2	200	4.5	100	3.4	5.8	3.0
15	300	9.1	200	4.3	100	3.3	5.4	3.0
16	300	9.1	210	4.2	100	3.0	5.3	3.0
17	280	9.2	220	4.0	100	2.7	5.0	3.1
18	260	9.2	220	---	100	---	4.6	3.2
19	230	8.4					4.5	3.2
20	230	7.3					4.0	3.1
21	240	6.4					3.2	3.0
22	260	5.9					3.2	3.0
23	270	5.6					3.1	3.0

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 16

Panama Canal Zone (9.4°N, 79.9°W) June 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	5.9					2.5	3.0
01	260	5.5					2.4	3.0
02	250	5.2					2.3	2.9
03	250	4.8					2.9	3.0
04	230	4.4					3.1	3.0
05	250	3.8					2.5	3.0
06	260	4.1			---	---	4.0	3.0
07	270	5.2	230	---	120	2.2	4.6	3.1
08	320	5.4	220	4.2	110	2.7	4.2	3.0
09	400	5.8	200	4.4	110	3.1	5.1	2.6
10	420	6.8	210	4.4	110	3.3	4.8	2.5
11	400	8.2	210	4.5	110	3.4	5.5	2.6
12	400	8.8	210	4.5	110	[illegible]	4.3	2.6
13	380	9.5	210	4.4	110	3.5	4.5	2.7
14	360	9.8	210	4.4	110	3.4	5.0	2.7
15	340	10.2	220	4.3	110	3.2	4.7	2.8
16	330	10.4	220	4.2	110	3.0	4.2	2.8
17	300	10.5	220	4.0	110	(2.5)	4.1	3.0
18	260	9.9	230	---	---	---	3.5	3.0
19	230	8.6					4.0	3.0
20	250	8.0					3.6	2.8
21	270	7.2					3.2	2.8
22	270	6.8					2.5	2.8
23	270	6.3					2.4	2.9

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 17

Kiruna, Sweden (67.8°N, 20.5°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(280)	(4.2)					4.0	(3.0)
01	(300)	(4.1)					4.1	(3.0)
02	(310)	4.0	---	2.8			3.1	(3.0)
03	350	4.0	270	3.0	120	2.1		2.9
04	360	4.0	250	3.2	110	2.2	2.1	2.8
05	395	4.1	240	3.5	115	2.3		2.8
06	440	4.2	235	3.7	110	2.4		2.7
07	400	4.4	230	3.9	110	2.5		2.7
08	400	4.9	220	4.0	110	2.7		2.8
09	390	5.0	220	4.0	110	2.8		2.8
10	390	5.0	210	4.1	110	2.9		2.9
11	435	5.0	210	4.1	110	3.0		2.8
12	400	5.1	210	4.1	110	3.0		2.9
13	375	5.0	210	4.1	110	3.0		2.9
14	380	4.9	210	4.1	110	3.0		2.9
15	375	4.8	220	4.0	110	2.9		2.9
16	360	4.8	240	3.9	110	2.7		3.0
17	310	4.7	240	3.8	110	2.5		3.1
18	305	4.4	250	3.6	120	2.3	2.8	3.1
19	280	4.5	250	3.2	120	2.1	3.3	3.1
20	280	4.4	---	3.0	130	2.0	3.3	3.0
21	290	4.5	---	---	---	---	3.4	3.0
22	265	4.3					3.0	(3.0)
23	(260)	(4.2)					3.4	(3.0)

Time: 15.0°E.
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 18

Narsarssuak, Greenland (61.2°N, 45.4°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(420)	(3.6)					4.0	(2.4)
01	(270)	(3.2)					4.0	(2.4)
02	(450)	(3.0)					4.0	(2.6)
03	(440)	(3.0)					3.8	(2.5)
04	380	(3.2)					4.0	(2.7)
05	(340)	(3.8)			---	---	4.8	(2.8)
06	(370)	(4.0)	270	---	---	---	4.5	(2.8)
07	(440)	4.2	270	3.7	130	2.4	3.7	2.6
08	(440)	(4.4)	270	3.9	120	(2.6)	3.1	2.7
09	(490)	(4.8)	260	(4.0)	130	2.8		(2.5)
10	540	4.5	260	4.0	120	2.9		2.4
11	540	(4.8)	260	(4.0)	120	3.0		(2.4)
12	(580)	(4.6)	280	(4.0)	120	3.0		(2.4)
13	(560)	(4.7)	270	(4.0)	130	3.0		(2.4)
14	(530)	(4.7)	270	(4.0)	120	2.9		(2.4)
15	520	(4.7)	290	4.0	120	(2.8)	3.0	(2.4)
16	(470)	(4.9)	300	(3.9)	120	(2.6)	3.6	(2.6)
17	(450)	(4.6)	300	(3.8)	130	(2.4)	3.9	(2.6)
18	(400)	(4.4)	(320)	(3.6)	130	2.2	4.0	(2.6)
19	(360)	(4.2)	310	---	---	---	4.8	(2.8)
20	(350)	(4.2)					4.3	(2.6)
21	(340)	(4.2)					5.5	(2.7)
22	(380)	(3.8)					5.0	(2.6)
23	(380)	(3.6)					4.0	(2.5)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 19

De Bilt, Holland (52.1°N, 5.2°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.7						3.0
01	270	3.4						2.9
02	275	3.2						2.9
03	280	3.0						3.0
04	250	3.3	---	---	---	1.6	2.5	3.0
05	255	3.8	240	3.2	120	1.9	2.7	3.2
06	300	4.4	220	3.6	100	2.3	3.2	3.2
07	340	4.5	205	3.9	100	2.6	3.2	3.2
08	310	4.9	200	4.1	100	2.8	3.4	3.2
09	345	5.0	200	4.2	100	3.0	3.5	3.0
10	400	5.0	200	4.3	100	3.1	3.7	2.9
11	370	5.4	200	4.3	100	3.1	3.6	3.0
12	350	5.4	200	4.3	100	3.2	3.6	3.1
13	350	5.4	200	4.3	100	3.2	3.6	3.1
14	320	5.5	200	4.3	100	3.1	3.5	3.1
15	315	5.3	205	4.2	100	3.0	3.5	3.2
16	300	5.6	220	4.0	100	2.7	3.3	3.2
17	290	5.8	225	3.7	105	2.4	3.2	3.1
18	270	6.0	235	3.3	120	2.0	3.4	3.2
19	250	6.3	---	---	---	---	2.3	3.2
20	230	6.4						3.2
21	230	5.7						3.2
22	230	4.9						3.2
23	<240	4.0						3.0

Time: 0.0°.
Sweep: 1.4 Mc to 11.2 Mc in 6 minutes, automatic operation.

Table 20

Schwarzenburg, Switzerland (46.8°N, 7.3°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	265	4.1						3.2
01	295	3.8						3.1
02	300	3.6						3.1
03	300	3.4						3.1
04	290	3.2						3.1
05	260	3.2						3.3
06	240	4.2	---	---	100	2.1		3.4
07	250	4.5	200	3.8	100	2.4	3.9	3.6
08	280	4.9	200	4.0	100	2.8	4.4	3.5
09	300	5.1	200	4.2	100	3.0	4.4	3.6
10	300	5.3	200	4.4	100	3.0	4.5	3.5
11	350	5.5	200	4.4	100	3.1	4.2	3.2
12	350	5.8	200	4.4	100	3.2	3.8	3.1
13	335	5.9	200	4.4	100	3.2		3.3
14	320	6.0	200	4.4	100	3.2		3.3
15	330	5.8	200	4.4	100	3.1		3.3
16	300	5.9	200	4.2	100	3.0		3.3
17	300	6.0	210	4.0	100	2.8		3.3
18	300	6.2	215	3.8	100	2.4		3.4
19	250	6.1	---	---	100	2.0		3.4
20	235	7.0						3.5
21	220	6.8						3.5
22	235	5.3						3.4
23	265	4.7						3.2

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 21

Watheroo, W. Australia (30.3°S, 115.9°E) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.3					2.9	3.0
01	270	3.4					2.9	3.0
02	270	3.6					2.8	3.0
03	270	3.5					2.9	3.0
04	245	3.4					2.8	3.1
05	235	3.0					2.8	3.1
06	250	2.7					2.8	3.1
07	230	4.0				1.8	2.4	3.4
08	230	5.4	210	3.0		2.2	2.9	3.6
09	250	5.8	210	3.7		2.8	3.0	3.5
10	250	6.2	220	4.0		3.0	3.0	3.5
11	250	6.6	210	4.0		3.0	3.3	3.4
12	260	6.6	210	4.0		3.0	3.3	3.4
13	260	6.2	210	4.0		3.0	3.2	3.3
14	260	6.6	220	4.0		3.0	3.2	3.3
15	260	6.9	220	3.8		2.9		3.4
16	240	6.4	220	3.2		2.4	2.9	3.5
17	220	5.8				2.0	2.8	3.5
18	220	4.3					3.0	3.4
19	230	3.3					2.8	3.3
20	240	3.0					2.8	3.2
21	260	2.9					2.8	3.0
22	270	3.0					2.7	3.0
23	280	3.2					2.8	2.9

Time: 120.0°E.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes, automatic operation.

Table 22

Buenos Aires, Argentina (34.5°S, 58.5°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.6						3.0
01	290	3.8						3.1
02	260	3.5						3.2
03	290	3.1						3.1
04	250	3.3						3.5
05	350	(1.8)						(2.9)
06	(320)	(1.8)						(3.0)
07	250	(5.0)						3.4
08	230	(5.9)						(3.4)
09	250	(7.5)	220					(3.4)
10	260	(8.0)	220					3.4
11	(250)	(9.1)	210					3.4
12	(250)	(9.0)	(210)				3.6	(3.3)
13	(270)	(8.8)	(220)					(3.2)
14	260	10.0	220				3.6	3.4
15	240	(9.6)	220					(3.4)
16	220	(8.2)					3.4	(3.4)
17	210	(6.6)						(3.4)
18	210	4.8						3.4
19	260	(5.0)						(3.3)
20	220	5.0						(3.3)
21	240	(4.6)						3.3
22	260	4.4						(3.2)
23	290	(4.0)						(3.0)

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 23

Deception I. (63.0°S, 60.7°W) May 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.8						3.1
01								
02	300	2.7						3.0
03								
04	250	2.6						3.2
05								
06	250	2.6						3.4
07								
08	220	3.5	200	2.4				3.5
09	230	4.6	210	3.2				3.6
10	220	5.4	200	4.0				3.7
11								
12	220	5.9	200	4.6				3.6
13								
14	230	5.4	190	4.1				3.7
15	230	5.1	200	3.3				3.6
16	200	4.6	---	---				3.6
17								
18	210	3.2						3.6
19								
20	280	2.0						3.2
21								
22	300	2.4						3.1
23								

Time: 60.0°W.
Sweep: 1.5 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 24

Reykjavik, Iceland (64.1°N, 21.8°W) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	---					5.3	---
01	---	(2.7)					4.7	(2.7)
02	---	---					4.4	---
03	---	---					4.4	---
04	---	---			---	---	4.5	---
05	---	---	---	---	---	---	(3.1)	---
06	(280)	(3.4)	---	---	---	---		(3.2)
07	---	(3.9)	---	---	---	---		---
08	(340)	(3.9)	220	3.5	110	2.5		(3.0)
09	(360)	(4.0)	220	3.6	110	---		(3.1)
10	(410)	(4.4)	230	3.7	110	---		(3.0)
11	(370)	(4.7)	225	3.8	---	---		(3.0)
12	440	4.5	220	3.8	---	---		2.8
13	400	4.6	240	3.8	110	3.0		2.9
14	400	4.6	220	3.8	110	2.8		2.9
15	400	4.7	230	3.8	110	2.8		2.9
16	370	4.5	240	3.6	110	2.6		3.0
17	340	4.3	250	3.5	110	2.4	2.5	3.0
18	320	4.3	260	---	120	2.3	3.5	3.0
19	300	4.1	270	---	110	---	4.2	3.0
20	320	3.6	---	---	---	---	4.4	3.0
21	310	3.4					4.8	2.9
22	(360)	(3.2)					4.5	(2.8)
23	(350)	(3.0)					4.1	(3.0)

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 25

Narsarssuak, Greenland (61.2°N, 45.4°W) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	420	(3.0)					5.1	(2.5)
01	(480)	(2.6)					4.1	(2.4)
02	---	---					4.0	---
03	---	---					4.5	---
04	---	---					5.0	---
05	(330)	(3.3)			---	---	4.0	(2.7)
06	(300)	(3.7)	---	---	---	---	4.1	(2.8)
07	(500)	(3.8)	280	(3.3)	140	2.4	3.3	(2.6)
08	G	<3.8	300	3.6	---	---	3.1	G
09	(700)	<4.0	(290)	(3.8)	140	2.8		(2.2)
10	(680)	(4.2)	270	3.8	140	2.9		(2.2)
11	(550)	(4.3)	280	(3.9)	130	3.0		(2.4)
12	(570)	(4.6)	270	(3.9)	130	3.0		(2.4)
13	540	(4.6)	270	(3.9)	130	3.0		(2.4)
14	530	(4.6)	280	(3.8)	130	(2.9)	2.8	(2.4)
15	490	(4.5)	270	3.8	130	(2.7)	3.0	(2.5)
16	(480)	(4.4)	(300)	(3.7)	130	2.5	3.0	(2.6)
17	(420)	(4.3)	(340)	(3.4)	130	(2.2)	4.2	(2.6)
18	(420)	(4.4)	---	---	130	---	4.5	(2.6)
19	(370)	(3.9)	---	---	---	---	4.4	(2.7)
20	(370)	(3.8)	---	---			4.0	(2.7)
21	(380)	(3.5)					4.4	(2.6)
22	(370)	(3.0)					4.0	(2.5)
23	(370)	(3.0)					3.8	(2.5)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 26

Lindau/Harz, Austria (51.6°N, 10.1°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.3					[illegible]	[illegible]
01	290	[illegible]					2.1	[illegible]
02	290	2.7					2.3	[illegible]
03	280	2.5					2.3	[illegible]
04	280	2.4					[illegible]	2.9
05	280	2.6			---	E	2.4	3.1
06	250	3.4	240	---	---	1.6	2.4	3.2
07	280	4.0	230	3.6	110	2.2	2.8	3.2
08	330	4.3	220	3.8	100	2.5	3.2	3.1
09	320	4.8	210	3.9	100	2.8	3.2	3.2
10	350	5.2	210	4.1	100	2.9	3.3	3.0
11	340	5.4	200	4.3	100	3.0	3.7	[illegible]
12	360	5.4	210	4.3	100	3.1	3.8	2.9
13	330	5.8	200	4.3	100	3.0	3.8	3.1
14	320	6.0	220	4.3	100	3.0	3.5	3.1
15	310	5.8	220	4.2	100	2.9	3.4	3.1
16	290	6.0	220	3.9	100	2.6	3.3	3.2
17	280	5.9	230	3.7	100	2.4	2.8	3.2
18	270	5.8	240	---	110	2.0	2.3	3.2
19	250	5.4	---	---	---	E	2.3	3.1
20	240	5.2					2.1	3.1
21	250	4.8					2.1	3.0
22	260	3.8					2.0	3.0
23	290	3.5					2.1	2.8

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 8 minutes.

Table 27

Wakkanai, Japan (45.4°N, 141.7°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	4.6						2.7
01	330	4.4						2.6
02	320	4.3						2.7
03	310	4.2						2.8
04	310	4.3						2.8
05	300	4.7						3.0
06	290	5.3	---	---	120	2.0		3.0
07	300	5.8	280	4.0	120	2.6		3.0
08	300	6.2	280	4.4	120	2.8		3.0
09	310	6.4	270	4.2	120	3.2	3.8	3.0
10	320	6.5	260	4.2	120	3.3	3.9	2.9
11	320	6.6	260	4.4	110	---	3.7	2.9
12	360	6.8	250	4.5	120	---		2.8
13	330	7.2	250	4.4	110	3.2		2.9
14	320	7.2	280	4.4	120	---		3.0
15	300	7.0	280	4.2	120	2.8		3.0
16	300	6.7	280	4.0	120	2.6		3.0
17	290	6.6	270	---	120	2.4		3.0
18	290	6.1						2.9
19	300	5.8						2.9
20	300	5.6						2.7
21	310	5.5						2.8
22	320	4.8						2.7
23	320	4.7						2.7

Time: 135.0°E.
Sweep: 1.0 Mc to 15.5 Mc in 2 minutes.

Table 28

Akita, Japan (39.7°N, 140.1°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	4.6						2.8
01	290	4.5						2.9
02	280	4.5					1.3	3.0
03	260	4.4					1.4	3.1
04	260	3.8						3.0
05	260	3.9	---	---	120	1.2		3.0
06	240	5.5	---	---	110	2.0		3.3
07	250	6.2	230	3.9	110	2.6		3.3
08	260	6.8	240	4.1	110	2.9	3.9	3.3
09	280	7.3	230	4.4	110	3.1	4.4	3.2
10	280	7.4	230	4.6	110	3.3	4.1	3.2
11	290	7.1	230	4.7	110	3.4	4.7	3.1
12	300	7.2	220	4.7	110	3.3	3.8	3.1
13	290	7.6	220	4.6	110	3.3		3.1
14	280	7.8	230	4.5	110	3.2		3.2
15	280	8.0	230	4.2	110	3.0	3.4	3.2
16	260	7.6	240	3.8	110	2.8	3.0	3.3
17	250	6.9	230	3.5	110	2.4	3.2	3.3
18	240	7.0	---	---	---	1.9	3.0	3.3
19	230	6.6					2.4	3.2
20	230	5.6					2.4	3.2
21	280	5.2					2.3	2.9
22	270	5.0						2.9
23	290	4.7						2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 15 minutes, manual operation.

Table 29

Tokyo, Japan (35.7°N, 139.5°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.7						2.7
01	300	4.5					2.1	2.7
02	290	4.6						2.8
03	280	4.4					1.6	2.9
04	280	3.7						2.9
05	280	4.0			---	1.4		3.0
06	250	6.0	260	---	120	2.0		3.2
07	260	6.5	240	3.9	110	2.6		3.3
08	280	7.4	250	4.1	110	2.9	3.5	3.2
09	290	7.5	240	4.6	110	3.1	4.8	3.1
10	290	7.8	230	4.5	110	3.2	4.6	3.1
11	300	8.0	230	4.6	110	3.2	4.4	3.1
12	290	8.5	240	4.6	110	3.3	4.2	3.0
13	310	8.8	230	4.6	120	3.4		3.0
14	300	9.1	240	4.5	110	3.2		3.0
15	280	8.8	250	4.2	110	3.0		3.1
16	280	8.1	250	4.0	110	2.7	3.5	3.2
17	260	7.4	260	---	110	2.2	3.3	3.2
18	260	7.5	---	---	---	---	2.8	3.2
19	250	7.0					2.6	3.1
20	240	5.9					2.6	3.0
21	290	4.8					2.2	2.8
22	310	4.8					2.1	2.7
23	310	4.6					2.0	2.7

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 30

Yamagawa, Japan (31.2°N, 130.6°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.9					2.4	2.9
01	290	4.6					2.2	2.9
02	270	4.8						3.0
03	250	4.8					2.1	3.2
04	240	3.6					2.0	3.0
05	290	3.7						2.9
06	250	4.5						3.3
07	240	6.3			110	2.2		3.4
08	240	6.7	230	4.0	100	2.6		3.4
09	260	7.2	220	4.5	100	3.0	4.2	3.3
10	280	7.8	210	4.5	100	3.2	4.3	3.1
11	290	9.2	210	4.9	100	3.3	4.0	3.1
12	290	10.2	240	4.8	100	3.3		3.1
13	290	11.5	240	4.8	100	3.4		3.1
14	280	11.7	220	4.6	100	3.3	3.7	3.2
15	260	10.9	220	4.5	100	3.1		3.2
16	250	9.8	230	4.2	100	3.0	4.5	3.2
17	250	9.6	240	3.8	100	2.5	4.0	3.3
18	240	8.6			110	1.8	3.4	3.4
19	230	8.2					3.0	(3.3)
20	220	6.6					2.9	3.4
21	230	4.8					2.4	3.0
22	300	5.0					2.6	2.8
23	300	5.0					2.5	2.8

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 2 minutes.

Table 31

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.2					2.0	2.9
01	280	3.4						3.0
02	260	3.2					2.8	3.1
03	250	3.2					1.7	3.2
04	230	2.8					1.8	3.2
05	240	2.6					2.8	3.1
06	250	2.8						3.0
07	230	5.4	---	---	120	2.0		3.5
08	240	6.6	230	---	110	2.5		3.4
09	260	7.4	220	4.2	110	2.9		3.3
10	270	8.6	220	4.5	110	3.1	3.6	3.2
11	270	9.1	210	4.6	110	3.3	3.7	3.2
12	270	8.6	210	4.6	110	3.4	3.7	3.1
13	280	8.9	200	4.6	110	3.4	3.6	3.1
14	280	9.4	210	4.5	110	3.3	3.6	3.1
15	270	9.4	220	4.4	110	3.1	3.7	3.2
16	250	9.0	230	3.8	110	2.8	3.7	3.3
17	230	8.1	---	---	110	2.2	3.2	3.4
18	220	6.6			---	---	2.4	3.4
19	220	4.8			---	E	2.0	3.3
20	240	3.4					1.9	3.2
21	250	3.6						3.2
22	240	3.4						3.2
23	260	3.2					2.0	3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 32

Capetown, Union of S. Africa (34.2°S, 18.3°E) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	3.0					1.7	3.0
01	280	3.0						3.0
02	270	3.2					1.9	3.0
03	260	3.2					1.8	3.0
04	260	3.1					1.8	3.1
05	250	2.9					2.0	3.2
06	250	2.8					1.7	3.1
07	240	3.8			---	---		3.3
08	230	5.7	240	---	120	2.1		3.4
09	250	6.8	230	3.9	110	2.6		3.4
10	260	7.5	220	4.2	110	2.9	3.6	3.3
11	270	8.0	220	4.3	110	3.1	3.8	3.2
12	280	8.6	210	4.5	110	3.2	3.9	3.1
13	280	9.3	200	4.6	110	3.2	3.7	3.1
14	280	9.6	210	4.5	110	3.2	3.8	3.1
15	270	9.2	220	4.4	110	3.1	3.5	3.2
16	260	8.8	230	4.0	110	2.9	3.1	3.3
17	240	8.0	230	3.4	110	2.5	2.9	3.4
18	220	7.0	---	---	110	1.8	2.4	3.5
19	220	5.4					2.0	3.4
20	230	3.7					1.9	3.2
21	240	3.3						3.3
22	250	3.0						3.2
23	250	3.0						3.0

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 33

Buenos Aires, Argentina (34.5°S, 58.5°W) April 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.8					2.6	2.8
01	330	3.7					2.4	2.8
02	320	3.8					3.6	2.9
03	280	4.4					2.2	3.0
04	240	4.1					2.2	3.4
05	(270)	2.9					1.6	3.2
06	290	3.0						3.0
07	240	6.0						3.4
08	250	(7.0)	240					(3.4)
09	260	8.7	230				3.6	3.4
10	270	9.1	220				4.0	3.3
11	270	9.0	(220)				5.0	3.2
12	280	10.0	(220)				4.8	3.2
13	280	11.0	(220)				4.9	3.3
14	270	10.8	(230)				4.2	3.3
15	260	10.7	230				4.4	3.3
16	240	10.8	240				3.7	3.4
17	220	9.5					3.7	3.5
18	210	6.7					4.1	3.5
19	240	5.5					3.6	3.2
20	250	5.6					2.9	3.1
21	250	5.0						3.2
22	300	4.4						3.0
23	320	3.9						2.9

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 34

Formosa, China (25.0°N, 121.5°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	5.5						2.9
01	260	4.6						3.0
02	270	4.5						3.0
03	240	4.5						3.4
04	<260	2.9						3.1
05	---	2.6						3.2
06	---	>3.4			---	E		3.0
07	260	6.0	250	---	---	E		3.4
08	270	7.8	240	4.2	---	---		3.2
09	280	9.0	240	4.3	---	---		3.2
10	270	10.1	230	4.6	120	(3.3)	4.0	3.2
11	280	11.9	230	4.7	115	3.6	3.9	3.2
12	280	13.5	230	4.7	120	---	4.1	3.2
13	280	14.5	230	4.6	120	---	4.0	3.2
14	280	>14.5	230	4.6	120	---	4.2	3.2
15	270	>14.5	230	4.4	110	---	3.9	3.2
16	270	>14.5	230	4.3	---	---	3.9	3.3
17	260	13.7	240	---	110	---	3.6	3.4
18	230	12.1	---	---	---	E		3.4
19	230	[illegible]						3.4
20	250	7.1						3.0
21	260	6.2						2.8
22	280	6.2						2.9
23	270	5.9						2.8

Time: 120.0°E.
Sweep: 2.3 Mc to 14.5 Mc in 15 minutes, manual operation.

Table 35

Nairobi, Kenya (1.0°S, 37.0°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	8.2						3.3
01	210	6.1						3.1
02	240	5.1						3.0
03	250	4.8					1.6	3.1
04	250	4.5					2.8	3.1
05	230	4.2					2.8	3.3
06	240	2.8					2.2	3.3
07	240	5.8	---	---	120	---	2.7	3.4
08	250	7.6	230	---	110	2.6	3.2	3.4
09	280	8.0	220	4.4	110	3.0		3.2
10	300	9.1	200	4.6	110	3.3		2.9
11	300	10.1	---	4.7	110	---		2.9
12	320	11.0	---	4.8	110	---		2.8
13	320	(11.5)	---	(4.8)	110	---		2.8
14	310	>12.0	---	4.7	110	---		2.8
15	300	12.4	200	4.5	110	---		2.9
16	300	11.9	220	4.4	110	3.1		2.9
17	280	11.7	230	---	110	2.7	3.4	2.9
18	(270)	11.5	250	---	110	---	3.0	2.9
19	270	>11.0					2.9	(2.9)
20	(260)	>11.0					(2.9)	---
21	240	>11.0					(2.6)	---
22	220	11.9						3.4
23	210	>11.0						3.4

Time: 45.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 36

Townsville, Australia (19.3°S, 146.8°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	5.2					2.7	3.1
01	240	4.3					1.8	3.1
02	220	4.1						3.2
03	230	3.4						3.1
04	250	3.4					2.9	3.0
05	250	3.3					2.5	3.1
06	245	3.4					2.2	3.2
07	230	5.7			110	2.2	3.2	3.3
08	250	7.2	210	4.3	100	2.6	4.4	3.2
09	255	8.8	205	4.3	100	3.0	4.2	3.3
10	250	9.6	220	4.5	100	3.3	4.5	3.2
11	260	9.5	200	4.5	100	3.4	5.1	3.2
12	270	9.5	200	4.6	100	3.4	4.4	3.1
13	260	9.8	200	4.5	100	3.5	4.1	3.1
14	260	9.5	200	4.4	100	3.3	4.4	3.2
15	260	9.5	210	4.4	110	3.2	4.4	3.2
16	250	9.5	230	4.0	110	2.9	4.4	3.2
17	245	8.4	230	3.5	110	2.5	4.3	3.3
18	240	7.5			---	E	3.8	3.3
19	225	6.4					3.2	3.2
20	245	5.7					2.5	3.0
21	280	5.5					2.2	2.9
22	280	5.2					2.4	3.0
23	250	5.3					2.6	3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 37

Brisbane, Australia (27.5°S, 153.0°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.5					2.3	2.9
01	260	4.4					2.5	3.0
02	250	4.4					2.9	3.1
03	240	4.0					2.0	3.1
04	250	3.5						3.0
05	250	3.1						3.0
06	240	4.4			---	1.6		3.3
07	235	5.8	230	3.4	110	2.4		3.4
08	265	6.4	220	4.1	100	2.8		3.3
09	290	7.4	210	4.5	100	3.0	3.1	3.2
10	280	7.6	200	4.5	100	3.2	3.8	3.2
11	280	8.0	200	4.6	100	3.4	4.0	3.1
12	280	8.1	200	4.6	100	3.5	4.0	3.1
13	280	8.3	200	4.6	100	3.4	4.0	3.1
14	280	8.2	210	4.5	---	3.3	3.5	3.1
15	270	8.0	225	4.3	100	3.1	3.8	3.2
16	260	8.0	220	4.1	110	2.8		3.2
17	250	7.5	240	3.4	110	2.3	2.0	3.3
18	230	6.3			---	E	3.0	3.2
19	225	5.8					2.7	3.1
20	270	4.8						3.0
21	280	4.8						2.8
22	270	4.7						2.9
23	280	4.7						2.9

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 38

Hobart, Tasmania (42.8°S, 147.4°E) March 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.0						2.8
01	270	2.7						2.9
02	280	2.5						2.9
03	280	2.3					3.0	2.9
04	250	2.4					3.0	3.0
05	270	2.0					3.0	3.0
06	250	2.7			---	E	2.5	3.0
07	240	4.0			100	2.0		3.2
08	230	4.5	220	3.9	100	2.5		3.2
09	260	5.0	210	4.0	100	2.9		3.0
10	350	5.3	200	4.4	100	3.1		3.0
11	320	5.8	200	4.5	100	3.1	2.9	3.0
12	310	6.0	200	4.5	100	3.3	3.5	3.0
13	300	6.5	200	4.5	100	3.3	3.5	3.0
14	300	6.5	200	4.5	100	3.2		3.0
15	290	6.0	210	4.4	100	3.0		3.1
16	225	6.0	200	4.2	100	2.8		3.1
17	230	5.7	---	---	100	2.4		3.1
18	230	6.0			120	1.7	2.5	3.1
19	230	6.0					3.0	3.0
20	230	5.5					3.0	3.0
21	250	4.5					3.1	3.0
22	250	3.7						2.9
23	280	3.2						2.8

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 39*

Inverness, Scotland (57.4°N, 4.2°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(2.3)						(2.5)
01	330	(2.1)					2.7	(2.7)
02	315	(2.3)					2.7	(2.6)
03	310	(2.2)					2.4	(2.6)
04	310	(2.0)					1.4	(2.6)
05	320	(2.1)						(2.6)
06	305	(2.0)						(2.8)
07	295	(2.4)			140	1.5		(2.9)
08	250	3.6			130	1.8		3.2
09	240	4.4	235		130	2.0	2.8	3.2
10	260	5.0	230	(3.5)	125	2.3		3.2
11	265	5.5	225	3.6	125	2.5		3.2
12	265	6.0	220	3.6	120	2.5		3.2
13	255	6.3	225	3.6	125	2.6		3.2
14	250	6.1	225	(3.4)	130	2.5		3.2
15	240	6.0	235	(3.3)	130	2.3		3.2
16	240	5.7	250		145	2.1		3.2
17	235	5.5			(145)	1.8		3.2
18	240	4.3						3.1
19	260	3.5						3.0
20	315	(2.5)						(2.9)
21	320	2.5						(2.8)
22	330	2.4						(2.8)
23	330	(2.3)						(2.7)

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 40*

Slough, England (51.5°N, 0.6°W) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	2.4					2.4	2.7
01	295	2.5					2.5	2.7
02	295	2.4					2.8	2.7
03	295	2.1					2.7	2.7
04	295	1.9					3.5	2.7
05	300	1.9					3.9	2.8
06	310	1.8					4.0	2.8
07	265	2.9			(125)	1.6	3.3	3.0
08	240	4.6	245	3.2	135	1.9	4.0	3.4
09	250	5.7	230	3.5	130	2.3	4.4	3.4
10	280	6.1	225	3.7	120	2.6	4.5	3.3
11	265	6.5	220	3.9	125	2.7	4.4	3.3
12	260	6.6	220	3.9	125	2.8	4.4	3.4
13	260	6.4	220	3.9	125	2.8	4.6	3.3
14	255	6.3	225	3.7	125	2.7	4.5	3.4
15	245	6.2	235	3.6	125	2.4	4.4	3.4
16	235	6.1	245	3.4	130	2.1	4.0	3.4
17	230	5.5			145	1.8	3.4	3.4
18	230	5.0					2.6	3.2
19	250	4.4						3.0
20	265	3.4						2.9
21	290	2.9						2.8
22	300	2.7						2.8
23	310	2.4						2.8

Time: 0.0°.
Sweep: 0.55 Mc to 16.5 Mc in 5 minutes.
*Average values except foF2 and fEs, which are median values.

Table 41

Delhi, India (28.6°N, 77.1°E) February 1952**

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.9						3.3
01	(300)	2.9						
02	---	---						
03	---	---						
04	300	3.0						3.4
05	300	3.0						
06	280	3.4						
07	260	5.4						
08	260	7.2						3.7
09	270	8.0						
10	280	8.6						
11	280	9.5						
12	280	9.1						(3.5)
13	260	9.5						
14	270	9.5						
15	260	8.6						
16	260	8.0						(3.5)
17	250	7.5						
18	250	6.5						
19	280	5.2						
20	260	4.4						(3.5)
21	260	3.9						
22	280	3.2						(3.5)
23	300	3.0						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 42

Bombay, India (19.0°N, 73.0°E) February 1952**

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06								
07	270	6.1						
08	330	8.6						3.2
09	320	9.2						
10	360	10.2						
11	360	11.1						
12	360	11.6						2.9
13	360	12.1						
14	360	12.6						
15	360	12.4						
16	360	11.8						3.4
17	360	11.5						
18	360	11.0						
19	330	10.0						
20	300	9.2						3.2
21	300	8.4						
22	270	7.6						3.4
23	270	7.2						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 43

Madras, India (13.0°N, 80.2°E) February 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06								
07	330	5.9						
08	360	7.7						(2.9)
09	390	8.7						
10	390	9.3						
11	420	9.0						
12	420	9.4						(2.6)
13	420	10.0						
14	420	10.3						
15	420	10.4						
16	420	10.5						(2.6)
17	420	10.7						
18	420	9.9						
19	420	9.8						
20	420	9.2						(2.6)
21	390	9.1						
22	390	(8.7)						
23								

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values; other columns, median values.

Table 44

Tiruchy, India (10.8°N, 78.8°E) February 1952

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2**
00								
01								
02								
03								
04								
05								
06	360	4.0						
07	420	5.8						(2.4)
08	480	7.9						
09	500	8.7						
10	540	8.6						
11	540	8.6						(2.3)
12	540	8.9						
13	540	9.5						
14	520	9.7						
15	540	9.8						(2.4)
16	530	10.2						
17	540	9.7						
18	540	9.6						
19	540	9.1						(2.3)
20	500	8.6						
21	480	8.4						
22	(540)	(8.3)						
23	---	---						

Time: Local.
Sweep: 1.8 Mc to 16.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.
**Average values, other columns, median values.

Table 45 *

Singapore, British Malaya (1.3°N, 103.8°E) February 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	5.1						3.1
01	255	4.2						2.9
02	260	3.9						2.9
03	275	3.6						2.9
04	270	3.1						2.9
05	255	3.4						3.1
06	270	3.1					2.4	3.0
07	250	6.4			(125)	2.2	3.1	3.1
08	280	7.6	230		115	2.8	3.6	2.9
09	315	8.1	215	(4.3)	110	3.2	3.9	2.6
10	345	8.5	215	(4.6)	110	3.4	4.1	(2.3)
11	370	9.0	205	4.7	110	3.5	3.9	
12	365	8.9	200	4.7	110	(3.6)	3.8	2.4
13	365	9.0	(200)	4.7	(110)	(3.5)	3.9	(2.4)
14	375	9.3	210	(4.6)	(115)	(3.4)	4.0	2.3
15	350	9.5	210		(110)	3.2	3.8	2.4
16	310	9.6	235		(110)	(2.8)	3.8	2.4
17	(320)	9.7	245			(2.4)	3.8	2.4
18	275	10.2					3.4	2.5
19	295	9.6					2.8	2.6
20	300	9.1						(2.7)
21	280	9.1					2.3	2.8
22	240	9.5						3.1
23	215	7.0						3.3

Time: 105.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.
*Average values except foF2 and fEs, which are median values.

Table 46

Fribourg, Germany (48.1°N, 7.8°E) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	3.1					2.0	2.8
01	270	3.2					2.0	2.8
02	<275	3.2					2.1	2.8
03	<270	3.1					2.2	2.8
04	<260	2.7					1.9	2.9
05	<250	2.3					2.1	3.0
06	250	2.2						3.0
07	260	2.5						3.0
08	230	5.0	---	---	151	<1.7	1.9	3.4
09	230	6.6	---	---	131	2.2	2.3	3.4
10	235	7.0	230	---	125	2.5	2.9	3.4
11	240	7.4	225	3.7	125	2.7	1.8	3.5
12	235	7.3	220	3.9	128	2.8		3.5
13	235	7.1	230	3.7	126	2.8		3.4
14	240	7.1	240	3.5	126	2.6		3.4
15	230	6.8	240	---	127	2.2	2.3	3.5
16	225	6.0	---	---	(141)	(1.7)	2.7	3.4
17	220	5.4					1.3	3.4
18	225	4.4					2.0	3.3
19	235	3.3						3.1
20	260	3.0					2.2	3.0
21	<285	3.0					2.1	2.8
22	(285)	3.0					2.0	2.7
23	(290)	3.0					2.0	2.8

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 47 *

Falkland Is. (51.7°S, 57.8°W) January 1952

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	6.6						2.5
01	300	6.4					3.0	2.6
02	310	6.2					2.9	2.6
03	310	5.7						2.6
04	310	5.8						2.6
05	310	6.1	260	3.4		2.2	2.8	2.7
06	330	6.3	250	3.9	140	2.5	3.4	2.6
07	350	6.5	250	4.1	130	2.8	4.1	2.7
08	350	6.3	250	4.1	120	3.1	4.6	2.7
09	370	6.5	240	4.6	120	3.3	5.5	2.7
10	370	6.6	220	4.7	120	3.4	5.0	2.7
11	370	6.9	220	4.7	120	3.4	4.8	2.7
12	370	7.2	190	4.7	120	3.5	4.7	2.7
13	350	7.2	240	4.8	120	3.5	4.6	2.8
14	340	7.1	230	4.7	120	3.4	4.6	2.8
15	330	7.0	240	4.6	120	3.3	4.9	2.9
16	290	7.4	240	4.4	120	3.1	5.0	3.0
17	310	7.2	250	4.2	130	2.8	4.7	3.0
18	290	7.4	240	4.0	140	2.5	5.2	3.0
19	270	7.2					4.5	3.0
20	270	6.8					4.1	2.8
21	300	6.8					4.7	2.6
22	310	6.7					4.7	2.6
23	310	6.8					4.2	2.6

Time: 60.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.
*Average values except foF2 and fEs, which are median values.

Table 48

Fribourg, Germany (48.1°N, 7.8°E) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.1					2.6	2.8
01	280	3.1					2.1	2.8
02	<280	3.2					1.9	2.8
03	270	3.1						2.9
04	255	2.8						3.0
05	240	2.5					2.2	3.0
06	250	2.2						2.9
07	<250	2.8			---	---		3.0
08	220	5.3	---	---	---	<1.6	2.4	3.5
09	220	6.7	---	---	121	2.1	3.0	3.4
10	220	7.7	230	---	119	2.4	2.7	3.5
11	230	8.0	230	3.8	123	2.6	2.8	3.4
12	228	7.6	230	3.6	121	2.7	2.9	3.5
13	230	7.6	228	---	126	2.6	2.7	3.4
14	235	7.8	225	---	<129	2.4	2.4	3.4
15	230	7.2	225	---	131	2.1	3.0	3.4
16	215	6.2	---	---	---	---	2.8	3.4
17	215	5.0					3.0	3.2
18	230	4.3					2.1	3.2
19	240	3.5					2.4	3.2
20	250	3.1					2.3	3.0
21	280	3.0					2.2	2.8
22	295	3.2					2.1	2.8
23	290	3.2					2.2	2.8

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 49

Dakar, French West Africa (14.6°N, 17.4°W) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	245	10.2					2.2	3.3
01	248	9.8						3.3
02	235	9.0						3.5
03	215	5.4						3.5
04	250	4.2					2.6	3.1
05	275	3.6					2.7	3.0
06	270	4.2			---	---	2.8	3.1
07	250	8.2	250	---	---	2.3	4.3	3.4
08	260	11.0	240	---	111	2.8	4.8	3.4
09	275	13.0	230	---	111	3.1	4.6	3.4
10	275	13.8	222	4.8	110	3.4	4.8	3.3
11	285	12.7	210	5.0	109	3.6	4.7	3.2
12	298	12.6	210	5.0	109	3.7	4.9	2.9
13	310	13.2	210	4.9	109	3.6	4.9	2.9
14	295	12.8	225	---	109	3.4	4.9	2.9
15	275	12.4	230	---	111	3.1	4.8	2.9
16	(270)	12.2	240	---	111	2.7	4.8	2.9
17	252	12.4	255	---	---	2.1	4.8	2.9
18	265	12.6			---	---	4.2	3.0
19	270	12.2					3.2	3.0
20	250	12.3					2.8	3.0
21	245	12.8					3.0	3.1
22	240	12.0					2.1	3.2
23	240	11.0					2.3	3.2

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 50

Tananarive, Madagascar (18.8°S, 47.8°E) December 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	262	6.8					3.2	3.0
01	250	5.8					3.2	3.0
02	270	5.1					2.6	3.0
03	272	4.7					2.8	2.8
04	280	4.3					2.2	2.8
05	278	4.0						2.9
06	250	5.4	228	---	119	2.0	3.0	3.1
07	(310)	6.2	230	4.2	112	2.7	4.1	3.0
08	335	7.3	222	4.5	111	3.2	4.4	2.8
09	340	8.0	220	4.8	111	3.4	4.8	2.7
10	345	9.2	220	4.9	109	3.6	4.5	2.8
11	350	9.6	210	5.0	111	3.7	4.2	2.7
12	340	9.9	210	5.0	111	3.8	4.2	2.8
13	342	>10.0	220	4.9	111	3.7	4.1	2.8
14	330	10.2	220	4.8	111	3.6	4.2	2.8
15	310	>10.0	230	4.6	111	3.5	4.1	2.9
16	300	9.6	220	4.5	105	3.0	4.2	2.9
17	290	9.1	235	---	109	2.6	4.0	3.0
18	260	8.4	---	---	---	---	3.8	2.9
19	270	8.0					3.5	2.9
20	250	7.8					3.0	3.0
21	265	7.5					2.9	3.0
22	278	6.4					3.0	2.8
23	270	7.0					3.2	2.9

Time: Local.
Sweep: 1.25 Mc to 20.0 Mc in 10 minutes, automatic operation.

Table 51

Calcutta, India (22.6°N, 88.4°E) October 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	210	8.0						2.6
01	180	7.2						
02	180	6.4						
03	180	5.0						2.8
04	180	3.9						
05	180	2.7						
06	210	4.2				2.2		2.8
07	240	6.5				2.4		
08	240	7.4				3.2		
09	240	8.5				3.5		2.7
10	240	9.0				3.7		
11	240	9.4				---		
12	270	9.6				4.0		2.6
13	255	9.8				4.0		
14	240	10.2				3.9		
15	240	10.4				3.5		2.7
16	(240)	10.5				3.0		
17	240	10.6				2.8		
18	240	10.3				2.4		(2.6)
19	240	10.0				2.2		
20	240	9.9						
21	210	9.5						(2.7)
22	210	8.6						
23	180	8.5						

Time: Local.

Table 52

Calcutta, India (22.6°N, 88.4°E) September 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(270)	(7.5)						---
01	(240)	(7.0)						
02	(240)	6.0						
03	270	5.2						(2.8)
04	240	3.9						
05	(240)	3.5						
06	(270)	5.0				2.2		---
07	240	7.0				2.8		
08	260	8.7				3.5		
09	270	9.2				4.2		(2.6)
10	300	10.0				4.3		
11	(300)	10.8				4.4		
12	(300)	11.1				4.5		(2.5)
13	300	10.8				4.4		
14	315	10.7				4.3		
15	(270)	(10.4)				4.3		2.5
16	(270)	10.0				4.0		
17	270	9.6				3.0		
18	270	9.1				2.5		(2.6)
19	240	8.5				2.2		
20	240	8.5						
21	(240)	(8.0)						2.6
22	(225)	(7.5)						
23	(240)	(8.0)						

Time: Local.

Table 53

Domont, France (49.0°N, 2.3°E) August 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	4.5					2.6	2.9
01	280	4.2						3.0
02	280	3.8					2.7	2.9
03	280	3.6					2.8	3.0
04	270	3.4	---	---	---	---	2.1	3.1
05	280	4.0	240	---	110	1.7	2.8	3.2
06	240	4.9	205	---	100	2.0	3.2	3.3
07	280	5.6	200	3.9	100	2.5	3.2	3.2
08	300	5.8	190	4.2	100	2.9	4.2	3.3
09	300	6.0	190	4.3	90	3.1	4.0	3.2
10	300	6.0	190	4.5	90	3.2	4.0	3.2
11	300	5.9	190	4.4	90	3.2	3.6	3.2
12	305	6.1	190	4.8	90	3.2	3.6	3.1
13	320	6.2	190	4.8	90	3.2	3.6	3.0
14	300	6.1	200	4.6	100	3.2	3.8	3.2
15	300	6.0	200	4.4	90	3.2		3.2
16	290	6.1	200	4.2	100	3.0	3.4	3.2
17	280	6.4	200	---	100	2.5	3.4	3.2
18	250	6.6	230	---	100	2.2	3.9	3.2
19	250	7.1	220	---	100	1.8	3.4	3.1
20	230	7.0	220	---	---	---	3.4	3.0
21	230	6.5					3.4	3.1
22	240	5.4					2.8	3.1
23	240	5.0					2.4	2.9

Time: 0.0°.
Sweep: 1.5 Mc to 16.0 Mc in 1 minute 30 seconds.

Table 54

Poitiers, France (46.6°N, 0.3°E) August 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<330	5.0						---
01	325	4.7						(2.8)
02	320	4.4						---
03	325	3.9						(2.7)
04	<320	3.8						---
05	290	4.0						(3.0)
06	260	5.1	---	---			3.2	(3.2)
07	300	5.4	225	3.9			4.1	(3.2)
08	310	5.8	220	4.2			4.2	---
09	320	6.1	215	4.5			4.4	(3.1)
10	310	6.1	210	4.6			4.4	(3.2)
11	330	6.2	220	4.7			4.9	(3.0)
12	330	6.3	210	4.7			4.2	3.1
13	320	6.6	220	4.8			3.8	3.1
14	320	6.2	220	4.6			3.7	3.1
15	320	6.3	220	4.6			3.7	3.1
16	310	6.3	230	4.3			3.2	3.1
17	300	6.4	230	4.0			4.0	3.0
18	280	6.5	---	---				3.0
19	260	7.2					3.3	(3.1)
20	270	7.2						---
21	260	6.8						---
22	280	5.7						---
23	305	5.3						---

Time: 0.0°.
Sweep: 3.1 Mc to 11.8 Mc in 1 minute 15 seconds.

Table 55

Calcutta, India (22.6°N, 88.4°E) August 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	7.2						3.1
01	270	6.8						
02	(300)	5.7						
03	(240)	(5.4)						(3.1)
04	(240)	(5.4)						
05	(240)	(5.2)				---		
06	(255)	(6.6)				2.7		(2.8)
07	(255)	(8.1)				3.2		
08	240	9.1				3.7		
09	270	12.4				3.8		2.7
10	270	12.8				3.9		
11	300	13.5				4.0		
12	270	13.8				4.0		2.6
13	270	(13.5)				4.0		
14	270	13.2				4.0		
15	300	13.0				3.9		(2.6)
16	300	13.2				---		
17	300	12.5				2.6		
18	240	11.5				2.4		---
19	240	8.5				2.4		
20	240	8.8						
21	240	8.0						(3.2)
22	(270)	(8.1)						
23	(240)	(7.5)						

Time: Local.

Table 56

Terre Adelie (66.8°S, 141.4°E) August 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	3.8	250		150	2.0	2.6	
01	280	4.4	250	3.5	140	2.3		
02	280	4.8		3.5	130	2.4		
03	300	4.8	245	3.5	130	2.4		
04	290	5.0	250	3.2	130	2.4		
05	270	4.9	250	(3.0)	150	2.2		
06	270	4.6	250	(3.3)	110	E		
07	260	4.7					2.5	
08	260	4.6						
09	270	3.6						
10	260	4.3						
11	260	3.6						
12	260	3.2						
13	270	3.2						
14	290	3.0						
15	280	2.6					2.8	
16	300	2.7					2.8	
17	300	2.7					2.6	
18	300	2.5					2.8	
19	300	(2.6)					2.6	
20	275	(2.8)					3.8	
21	280	(2.5)					2.2	
22	280	3.0					2.6	
23	280	3.7			135	1.9		

Time: 0.0°.
Sweep: 1.5 Mc to 16.3 Mc in 1 minute.

Table 57

Calcutta, India (22.6°N, 88.4°E) July 1951*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	255	7.8						2.5
01	(240)	7.6						
02	(210)	6.8						
03	(210)	(6.6)						(2.9)
04	210	5.6						
05	240	5.0				1.8		
06	(270)	(5.8)				2.2		(2.8)
07	(270)	(7.8)				2.3		
08	(270)	8.4				2.8		
09	300	9.6				3.0		(2.6)
10	300	10.1				3.1		
11	300	11.5				3.2		
12	(300)	11.8				3.2		---
13	(300)	11.5				3.2		
14	315	(11.2)				3.2		
15	(345)	(11.2)				3.1		(2.4)
16	(360)	(11.2)				3.0		
17	(330)	(11.2)				2.6		
18	(330)	(11.4)				2.2		(2.4)
19	(300)	(11.2)				2.0		
20	(300)	(11.0)					2.7	
21	(300)	(10.6)					3.4	(2.4)
22	(300)	(10.0)						
23	270	9.2						

Time: Local.
*No observations July 4 through July 20.

TABLE 58

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), July (Month), 1952

Observed at Washington, D. C.

Lat. 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. Mc., A.C.K., E.J.W.

Calculated by: F. Mc., A.C.K., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	270	(270) A	(280) A	(280) A	(320) S	(290) A	(300) A	330 H	(310) A	(320) A	340 H	[320] A	300	340	330	350	320	360	270	240	240	250	250	280
2	260	(310) A	(300) A	(280) A	(280) A	[280] A	280 H	G	660	500	380	350	440	600	400	360	350	330	320	280	(250) A	250	250	250
3	(270) A	250	260	230	(270) A	[400] A	(500) A	(320) A	[350] A	[470] A	470	[490] A	(340) A	[340] C	330	360	350	320	310	[300] A	(280) A	(260) A	(280) A	(270) A
4	(240) A	270	(280) A	(280) A	300	250	600	(400) S	(650) S	[510] A	(370) A	580	[540] A	430	500	390	[380] A	380	300	270	230	250	250 K	240 K
5	300 K	[340] AK	[320] AK	350 K	370 K	280 K	(240) LK	590 K	G K	G K	G K	G K	G K	570 K	420 K	410 K	430 K	380 K	290 K	280 K	A K	A K	A K	(250) AK
6	320 K	300 K	310 K	[300] AK	300 K	250 K	(280) LK	(350) FK	G K	580 K	600 K	480 H	570	400	400	420	400	380	330 H	A	A	A	A	A
7	(270) A	270	240	[270] A	300	230	350	420 H	350 H	270	350	350 H	350	350 H	360	440	350	300	270	250	(270) A	(250) A	270	(270) A
8	[270] A	(270) A	250	240	260	[260] A	(330) L	410	320	A	A	370	440	390	400 H	390	370	340	300	250	220	240	(270) A	(310) A
9	260	270	[280] A	(310) A	280	260 K	G K	G K	G K	G K	640 K	390 K	410 HK	480 K	(500) SK	A K	A K	340 HK	250 HK	250 K	220 K	(270) AK	270 K	260 K
10	250 K	280 K	300 K	A K	A K	A K	A K	G K	G K	620 K	370 K	G K	A K	A K	440	420	380	370	(300) A	[280] A	250	(260) A	260	250
11	260	280	(300) A	(280) S	(300) S	240	(270) L	400	520	G	G	540 H	[500] H	470	420	410	350	310	380	250	230	230	270	280
12	280	260	270	270	(270) A	240	(270) L	300 H	300 H	380	(390) A	310	320	390	340	350	340	330	280	260	220	220	(240) A	[270] A
13	(300) A	(280) A	[270] A	[280] A	(280) A	(280) A	260 H	350	280	360	310	360 H	400	360	330	310	320	280	260	240	240	240	250	270
14	260	210	220	220	290	300	[320] L	350	430	330	(480) A	370	500	490	470	420	420	330	280	250	230	260	270	260
15	280	280	260	260	290	280	330	350 H	270	260	300	360 H	440	360	420	390	[350] A	(330) A	290	280	230	240	250	[280] A
16	250	240	240	280	(240) A	260	(330) L	340 H	400	400	410	380	450	350	[370] S	390	370	320	310	260	230	220	(250) A	(280) A
17	260	280	250	270	240	220	230	[280] L	320	380	290	300	380	370 H	320	330	310	330 H	280	270	250	(240) A	(270) A	(280) A
18	270	270	[270] A	250	240	250	350	(270) L	340 H	350 H	430 H	350	380 H	270	240	320	370	310	300	260	230	[250] A	240	240
19	250	240	260	250	250	250	240	320 H	240 H	[300] A	(320) A	310	[320] A	340	370	340 H	320	290	280	260	240	240	240	250
20	260	250	240	240	(270) A	300	(400) L	380	350 H	320	370	390 H	440 H	320	390	340	390 K	350 K	290 K	300 K	250 K	250 K	240 K	270 K
21	270 K	250 K	230 K	240 K	300 K	310 K	G K	300 K	G K	G K	G K	490 K	480 K	580 K	500 K	490 K	520 K	380 HK	310 K	290 K	250	240	260	240
22	250	240	260	260	(290) S	290	(280) L	(500) A	460 H	G	540	G	490 H	600	500	370	350	330	280	260	250	240	250	240
23	270	260	250 H	(300) S	(290) S	280	(430) L	370	400	430 H	370	380	470	380	340	330	330	370	320	260	240	250	260	260
24	250	260	280	250	(300) S	280	(400) L	400	350	340 H	340	430	450 H	440	340	370	360	280	300	250	240	240	230	250
25	280	270	270	(280) S	(240) A	270	(260) L	(440) S	(410) L	350	400	380	470 H	390	350	330 H	350	320	290	250	(250) A	220	270	290
26	280 H	(250) A	(300) A	260	260	260	G	(380) L	370	380	G	800	G	600	470	460 H	[380] A	350	300	240	230	[240] A	(260) A	250
27	250	(300) A	(270) A	(260) S	(300) S	(270) A	370	380	350	350	410	370	360	[400] A	370	340	330	300	290	230	210	220	240	270
28	270	280	270	270	250	250	G	(300) L	550	360	370	570	610	G	(570) S	(450) A	450	350	350	270	230	230	220	(260) S
29	270	270	(270) A	(270) A	(270) A	230	250	(260) A	340	350 H	380 H	370	370	350	330	430 H	350	320	280	260	230	[250] A	250	(250) A
30	(260) A	(260) A	230	270	270	250	(280) L	380	390	300	300	390 H	410	370	360	400	310	300	290	250	230	230	250	250
31	260	250	270	260	(310) S	(300) S	270 H	430	400	470	350	450	470	430	330	360	350	320	280	250	240	250	240	250
Median	270	270	270	270	290	270	(320)	380	390	380	380	380	440	390	370	380	350	330	290	260	240	240	250	260
Count	31	31	31	30	30	30	30	31	31	30	30	31	30	30	31	30	30	31	31	30	29	29	29	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 59

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

foF2 (Characteristic), Mc (Unit), July (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W., A.C.K.

Calculated by: F.J.Mc., E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	3.7	(2.9)S	2.5	2.0	(1.8)FS	(3.0)F	4.6	5.4FH	6.0	6.0	6.4H	(6.4)A	6.0	5.9	5.6	5.8	6.2	6.6	7.4	7.1	6.0	5.9	5.6	4.8
2	4.3	3.7	3.5F	3.0F	(2.5)AS	2.7F	3.3H	<3.7G	4.3	4.5	4.9	5.0	4.8	5.0	5.2	5.3	5.5	5.6	5.5	5.8	6.5	6.1	5.6F	5.1
3	4.4F	3.5F	3.4F	3.1F	2.5F	(2.7)A	(3.6)AH	4.4	4.7	[4.7]A	4.8	[5.0]A	6.0	[6.0]C	6.0	5.4	5.5	5.5	5.8	[5.5]A	5.3	5.0F	4.4FS	4.1F
4	(4.0)SA	3.5	3.0F	2.6F	2.3F	2.7	3.3	4.0	4.0	[4.2]A	4.7	4.4	[4.6]A	4.8	4.7	5.0	[5.0]A	5.1	5.6	5.7	5.2F	5.1	(4.0)SK	3.5FK
5	3.0K	[2.7]AK	(2.6)SK	(2.4)FK	K(1.8)FS	(2.3)FK	3.0K	3.6K	<3.6GK	<3.8GK	<3.9GK	<3.9GK	<4.1GK	4.5K	5.0K	4.9K	5.3K	6.3K	6.3K	4.8K	4.3K	[3.6]AK	(3.0)AK	K(2.8)AS
6	2.7FK	2.7K	2.2FK	K(2.4)AS	2.2K	2.7FK	3.3FK	(3.8)FK	<3.8G	4.3K	4.4K	4.8H	4.7	4.9	4.8	4.7	4.7	4.7	5.0H	A	A	A	A	A
7	3.0F	2.8F	(2.4)F	[2.0]A	(1.8)S	2.7F	3.7	4.5H	4.8H	5.6	5.0	5.2H	5.3	5.5H	5.4	5.1	5.6	6.1	6.0	6.2	6.1	(5.3)AF	(4.8)AF	4.4
8	4.2F	3.7F	3.7F	3.0F	2.5F	(3.0)A	3.6	4.3	5.2F	A	A	5.4	5.2	5.4	5.4H	5.1	5.2	5.4	5.6	5.9	5.5	4.7	3.9	3.4
9	3.4	3.2	2.7	(2.5)AS	2.3	2.8K	<3.3GK	<3.6GK	<3.8GK	<3.9GK	4.5K	4.7K	4.8HK	4.9K	(4.8)SK	[4.8]AK	K[4.9]AS	5.5HK	5.6HK	5.4K	4.4FK	K(4.0)AJ	K(3.8)FS	3.6FK
10	3.2FK	2.6FK	2.5FK	A K	A K	2.8K	[3.2]AK	<3.5GK	<3.9GK	4.2K	4.7K	<4.2GK	A K	A K	4.9	4.9F	4.9	5.0	5.3	(5.2)A	5.3	4.9	4.8	4.7
11	3.8	3.1F	2.7F	2.3F	2.1F	2.7	3.2	4.1	(4.4)P	<4.1G	<4.2G	(4.3)HS	[4.4]A	4.7	4.8	4.9	4.9	4.9	4.6	4.7	4.2	4.0	3.5	3.2
12	3.2	2.9	2.6	2.4	2.3	2.1	4.0	(4.7)H	(4.5)H	4.9	(5.0)A	5.6	5.4	5.1	5.4	5.3	5.0	5.5	5.6	6.5	6.7	6.2	5.0F	[4.5]A
13	4.0	3.8	[3.5]A	[3.4]A	(2.9)AF	(3.3)A	(4.1)H	4.7	5.2	5.6	6.2	(5.4)H	5.6H	5.7	6.4	5.7	6.0	6.4	6.1	6.0	6.2	5.5	5.0	4.5
14	4.4	4.3F	3.7	2.8	2.5	2.7	3.7	4.5	4.7	5.4	4.8	5.3	4.9	5.0	5.0	5.1	5.2	5.5	6.0	5.8	5.2	4.8	4.6	4.5
15	3.9	3.7	3.3	2.9	2.7	3.0	4.0	5.0H	5.9H	6.1	5.8	5.3H	5.4	5.6	5.1	5.4	[5.6]A	5.8	6.0	6.3	6.6	5.9	4.9	4.8
16	4.6F	4.0F	3.0	2.3F	2.2F	3.0	(3.8)S	4.2H	4.7	5.0	5.0	5.4	5.1	5.4	[5.2]S	5.2	5.0	5.2JS	5.4	5.8	6.2	5.0	4.7JS	4.8
17	3.9	3.7	3.3	3.0	2.8JS	3.2	4.5	4.9	5.0	5.2	5.6	6.0	5.3	5.7H	5.6	5.6	5.2	5.5H	5.6	5.8	5.9	5.6	4.6	4.7
18	4.7	4.3	4.2	4.0	3.4	3.2	3.9	4.4H	4.8H	5.1H	5.4H	5.5	5.4H	5.3	5.4	5.4	5.3	5.5	5.6	6.0	5.9	5.5	4.6F	(4.2)F
19	3.5F	(3.1)F	(3.0)F	(3.0)F	(2.8)F	3.0	4.0	4.5H	5.2H	[5.2]A	(5.3)A	5.2	[5.4]A	5.7	5.6	5.9H	5.9	5.8	5.9	6.2	6.2	6.0	5.7	5.4
20	4.9	4.6	4.2	3.5F	3.0F	3.0	3.6	4.5	4.9H	5.6	5.7	5.9H	5.6H	6.6	5.6	5.6	5.2K	5.9H	6.1K	6.2K	6.3K	5.8K	4.5K	4.4K
21	4.0K	4.1K	3.3VK	2.2FK	1.8K	2.4K	<3.3GK	3.9K	<3.9GK	<3.9GK	<4.1GK	4.5K	4.7K	4.5K	4.5K	4.5K	4.4K	4.9HK	5.4K	5.2FK	6.2	5.9	5.3	4.8
22	4.5	3.7F	2.8	2.7	2.2	2.5	3.3	(3.9)S	4.2H	<4.0G	4.4	<4.2G	4.5H	4.5	4.6	4.8	5.1	5.2	5.0	4.8	5.1	5.2	4.3	3.8
23	3.3	3.1	2.8H	(2.4)S	(2.1)JS	2.5	3.5	4.2	4.5	4.5H	4.7	5.0	4.8	5.2	5.5	5.3	5.1	4.8	5.3	5.2	5.1	(4.8)FS	4.8	4.1
24	3.7	2.9	2.2F	2.0F	(1.7)S	2.4	3.4	4.1	4.7	4.9H	5.3	4.9	4.8H	5.0	5.6	5.2	5.4	6.0	5.9	6.6	5.6	5.3	3.9	3.4
25	2.8	2.7	2.4	2.3	(2.0)FS	2.4	3.8H	(4.0)S	4.4	4.9	4.8	5.2	5.0H	5.1	5.6	5.6H	5.7	5.9	6.2	6.3	5.7	4.9	3.8	3.4
26	3.2H	3.4	2.3F	2.2F	2.0	(2.7)S	<3.5G	3.8	4.5	(4.4)P	<4.1G	4.3	<4.2G	4.4	4.6	4.6H	[4.8]A	4.9	5.2	5.3	4.8	(3.9)A	3.5	3.4
27	2.8	2.4	2.3	(2.0)SA	1.8	2.5	3.6	4.3	4.5	5.1	5.0	5.2	5.4	[5.2]A	5.6	5.7	6.0	6.0	6.9	6.8	6.3	5.5	4.2V	3.0
28	2.7	2.5	2.5	2.2	1.9	2.5	<3.3G	3.7	4.1	4.6	4.7	(4.5)P	4.5	<4.3G	4.5	(4.4)A	4.6	4.7	4.8	5.2	5.7	4.7	(3.7)S	(3.1)FS
29	3.1F	2.7F	2.5F	(2.4)F	(2.2)F	(2.9)F	3.9	4.5	4.9	5.2H	5.0H	5.3	5.4	5.6	5.5	5.3H	5.4	5.5	5.6	5.6	5.9	[5.0]A	(4.6)FS	(4.6)S
30	4.1	3.7	3.3F	2.7	2.6	2.7	3.7	4.2	4.7	5.9	5.4	5.1H	5.1	5.3	5.4	5.5	5.9	5.7	5.6	6.0	6.1	4.9	4.0	(3.4)S
31	3.1	3.0F	2.5F	2.4F	(1.8)SF	2.3	3.1H	4.1	4.6	4.5	5.1	4.9	4.9	5.3	6.1	5.8	5.7	5.7	5.3	5.0	5.0F	5.1	4.5	3.7
Median	3.7	3.2	2.8	2.4	2.2	2.7	3.6	4.2	4.6	4.9	5.0	5.1	5.0	5.2	5.4	5.3	5.2	5.5	5.6	5.8	5.8	5.1	4.6	4.1
Count	31	31	31	30	30	31	31	31	31	30	30	31	30	30	31	31	31	31	31	30	30	30	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 60

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adapted June 1946

foF2 (Characteristic), Mc (Unit), July (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., A.C.K., E.J.W.

Calculated by: F.J.Mc., A.C.K., E.J.W.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	3.4F	2.8	2.2	(1.9)S	(2.4)F	4.2	5.4	5.7	6.1	(5.9)A	6.3	6.0	5.8H	5.7	5.4	6.1	6.4	7.0H	7.2	6.6	5.9	5.8	5.0	4.5
2	4.1	3.5	3.1	2.5F	2.3F	2.8H	<3.4G	4.3H	4.5	4.9	4.6	4.8	[4.9]A	5.0H	5.2	5.4	5.5	5.5	5.7	6.0	6.2	5.8	5.2H	4.6
3	4.1F	3.5	3.3F	2.9F	2.6F	3.3	(4.2)A	[4.6]A	4.6	4.7	4.9	[5.5]A	C	C	5.8	5.5	5.5	5.5	5.7	(5.3)A	5.3	4.7	4.3F	(4.0)AS
4	(3.9)S	3.3F	2.7	2.5	2.4	2.9	(3.7)S	[4.0]A	[4.1]A	4.7	4.6	4.5	4.8	(4.9)A	4.8	4.9	[5.2]A	5.5	5.8	5.7	5.2	4.7	3.8FK	3.1K
5	K(2.5)FA	2.5K	2.6K	1.9K	(2.0)SK	2.5FK	3.2FK	<3.6GK	<3.7GK	<3.9GK	<3.9GK	<4.0GK	4.3K	4.7K	5.0K	4.7K	5.8K	6.6K	5.8HX	4.9K	AK	AK	AK	2.6FK
6	3.0HK	2.6FK	2.3FK	(2.1)FK	2.4FK	3.1K	3.5K	<3.8GK	4.2K	4.3K	5.0HK	5.1H	4.8	4.7H	4.8H	(4.6)A	4.7	4.8	5.0	A	A	A	A	A
7	2.8F	2.7F	2.1F	1.8F	2.2F	3.3	3.8	(4.5)A	4.8H	5.5H	5.4H	5.4	5.4	5.3H	5.4H	5.5	5.8A	6.4	6.1	[6.1]A	(5.8)A	5.0F	4.7F	4.3F
8	4.2F	3.8F	3.2F	(2.7)F	2.7F	3.3	(3.8)S	4.7	5.6	A	A	5.1	5.5	5.5H	5.3H	4.9	5.3	5.4	5.8	5.7	5.2	4.3	3.8	(3.5)A
9	(3.3)AH	2.8F	2.6JA	2.6	2.5	3.3K	K<3.5GF	<3.7GK	4.0K	4.3K	4.7K	4.7K	5.1K	4.7K	4.7K	4.8K	5.0K	5.7K	5.5K	5.1K	K(4.2)AS	K3.8FS	K3.5FS	3.5K
10	2.9FK	2.5FK	2.5K	AK	AK	AK	AK	<3.8GK	4.1K	4.4K	4.8K	4.5K	AK	AK	4.9	4.8	4.7	5.2	[5.2]A	5.3	5.1	4.9	4.8	4.1
11	3.3	2.7F	2.7F	2.2F	2.2	3.1	3.8	4.7	(4.3)P	<4.1G	<4.2G	<4.2G	4.8	4.8	5.0	4.9	5.0	4.9	4.6	4.3	4.1	3.7	3.3	3.1
12	3.0	2.9	2.5	2.4	2.4	3.7	4.4	(4.8)H	4.8	5.3H	(5.1)A	(5.6)F	5.0H	5.2	5.5	5.1	5.4	5.6	6.1	6.8	6.5	5.8	4.6F	[4.4]A
13	(4.2)AF	(3.5)A	(3.3)A	3.1	2.9	3.9	4.3	5.1H	5.6	6.1	5.8	5.4	6.1	6.1	6.2	5.9	6.3	6.2	6.0	6.2	6.0	5.3	4.7	4.5
14	3.6	4.0	3.3	2.5	2.4	3.3H	4.2H	4.7	5.3	5.3	5.0	4.9	4.8	5.1	5.1	5.1	5.4	5.7	6.0	5.8	5.0	4.7	4.6	4.1
15	3.8	3.5	3.1	2.8	2.6	3.5	4.6	5.6	(5.8)H	(5.7)H	(5.3)H	5.3	5.7	5.7	5.0	(5.4)A	5.7	5.9	5.8	6.4	6.0	5.4V	4.9	4.8
16	4.5	3.4F	(2.5)F	2.2F	2.4F	3.4	4.0	4.2	5.0	4.7	5.1H	5.1	5.4	(5.2)S	5.2	[5.2]A	5.1	5.4	5.6JS	6.3	5.8	4.8	4.8	3.9
17	3.6	3.6	3.2	2.9F	2.8	4.0	4.8	5.0	5.3	5.2	5.2	5.3	5.5H	5.2H	5.6	5.6	5.2	5.6	5.7	5.9	5.9	(4.9)A	4.8	4.9
18	4.6	4.3	4.2	3.5	3.1	3.6	4.5	4.6H	5.0	5.1	5.5	5.5H	5.5	5.3H	5.5	5.3	5.2	5.4	5.8	6.3	5.7	5.3	4.5F	(3.5)F
19	3.5F	(3.2)F	2.9F	3.0F	(2.9)F	3.5	(4.2)H	4.9	A	A	[5.2]A	A	5.6H	5.6	5.8H	6.1	6.0	5.9	6.2	6.1	6.1	5.8	5.6	5.2
20	4.8	4.5	4.2	3.2	[3.0]A	3.5	4.2H	4.9	4.9H	5.1	5.2	6.3H	6.1	5.5	5.7	5.8	5.7K	6.3K	6.0K	6.4K	5.9K	5.3X	4.5K	4.3K
21	4.2K	4.0K	2.8K	1.9K	1.9K	2.9K	3.6K	3.9K	<3.9GK	4.4K	4.3K	4.6K	4.8K	4.4K	4.9K	4.3K	4.7K	5.1K	5.1FK	5.8K	6.4	5.6	5.2	4.2
22	3.7	3.2F	2.8	2.3	2.1	3.0	3.4	4.1	4.2	4.5	<4.1G	<4.3G	4.8	4.7	4.7	4.8	5.4	5.3	5.1	4.9	5.2	4.6	4.1	3.4
23	3.2	3.0	2.6	2.1JS	2.1	3.1	4.0	4.5	4.5	4.6	4.9	4.7	5.1	5.4	(5.5)S	5.1	5.0H	4.9	5.4	5.5	5.0	4.6	4.5	4.1
24	3.0	2.3F	2.2F	1.8F	1.9F	3.0	3.9	4.5H	4.8	5.0	5.1	4.7	4.8	5.5	5.3	5.4	5.8	6.2	6.1	6.0	5.4	4.6	3.8	3.0
25	2.8	2.5	2.4	(2.2)F	(1.9)S	3.2	(3.6)S	4.4H	4.6	5.1	5.0	5.2	5.1	5.3	5.5	5.4	5.8	6.3	6.3	5.9	5.3	4.1	3.5	3.2
26	3.2F	2.7	2.3F	2.1F	2.1F	3.3	3.8	4.3	4.7H	4.3	4.3	4.5	<4.3G	(4.4)P	4.8	4.7	4.9	5.0	5.4	5.0	4.6	3.6	3.5	3.3
27	2.6	2.4	(2.2)AS	(1.9)AS	2.0	3.1	(3.9)S	4.5H	4.8	5.3	5.2	5.2	5.1	5.4	5.6	5.6	6.0	6.2	7.5	7.2	5.7	4.8	3.3	2.8
28	2.6	2.5	2.4	2.2	1.8F	3.0	3.6	(3.8)S	4.2	(4.7)A	4.6	<4.3G	<4.3G	4.4	4.5	4.7	4.7	4.8	4.9	5.6	5.5	4.1	(3.2)JF	(3.1)F
29	(3.0)F	2.7F	2.5F	[2.3]F	2.4F	3.5F	4.2	4.6	5.3	5.2	4.9H	5.5	5.4	6.0	5.1	5.1	5.2	5.6	5.5	5.8	5.8	4.7	4.3	4.3
30	(3.8)SA	3.7	3.0	2.6F	2.5	3.2	3.8	4.5	5.4	5.8	5.1	5.0	5.1	5.2	5.4	5.5	5.8	5.8H	5.8	6.2	5.6	4.5	3.7	3.2
31	3.1	2.8	2.5	(2.0)SF	2.0F	2.9	(3.7)S	(4.3)F	4.7	5.1	5.1	4.9	5.0	5.6	5.8	6.0	5.7	5.5	5.2	5.0	5.2	4.8	3.8	3.7
Median	3.4	3.0	2.6	2.3	2.4	3.3	3.8	4.5	4.8	5.0	5.0	5.0	5.1	5.3	5.3	5.2	5.4	5.6	5.8	5.8	5.6	4.8	4.5	4.0
Count	31	31	31	30	30	30	30	31	30	29	30	30	29	29	31	31	31	31	31	30	29	29	29	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

TABLE 61

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

h'F1 (Characteristic), Km (Unit), July (Month), 1952

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., A.C.K., E.J.W.

Calculated by: F.J.Mc., A.C.K., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						Q	A	A	A	A	A	A	A	200 H	200	220	220 H	220 H	240	230				
2						Q	A	A	220 H	200	210	190 H	210	(200) A	210	220	220	A	A	A				
3						A	A	A	A	A	200	A	A	C	A	A	A	230	A	A				
4						Q	250	[220] A	(200) A	A	A	A	A	210	A	A	A	230	230	A				
5						Q K	220 K	230 K	200 K	210 K	180 K	180 K	220 K	220 K	240 K	210 K	220 HK	230 K	(250) AK	A K				
6						Q K	240 K	200 K	200 K	200 K	200 K	190 H	190 H	220 H	220 H	(220) S	200 H	180 H	(240) A	A				
7						Q	220	[220] A	210 H	A	A	180 H	[180] A	190 H	210	(220) A	(240) A	A	A	A				
8						Q	230	(230) A	A	A	A	A	170 H	230	210 H	210	230 H	A	A	250				
9						Q K	210 K	200 K	200 K	200 K	180 HK	170 HK	(220) AK	220 K	200 K	A K	A K	A K	200 K	A K				
10						A K	A K	210 K	(210) AK	(200) AK	[180] AK	170 K	A K	A K	A	A	(220) A	210	A	A				
11						Q	210	200 H	210	180 H	(180) A	A	A	210	[200] A	190 H	180 H	A	A	200				
12						210	200	210	200	210	[200] A	200	180 H	200 H	200	200	210	190	220	250				
13						A	210	230	(200) A	(190) A	A	A	A	190 H	A	A	200 H	210	200	A				
14						240	220	220	200	A	A	200 H	220 H	190	220	200	(230) A	230	210	A				
15						Q	230	220	200	190 H	180 H	200	200	200	230	A	A	A	A	260				
16						Q	230	230 H	200	190 H	210 H	170 H	200 H	(230) S	(200) S	230	200	[220] A	230	240				
17						Q	Q	200	200	180	180	[180] A	180	180	200	200	200	190	220	A				
18						Q	220	190	180 H	200	240	[230] A	(220) A	(200) A	A	A	A	A	240	240				
19						220	220	210 H	A	A	A	A	A	A	200 H	200 H	220 H	200	A	A				
20						A	240	(220) A	190 H	220	[210] A	200	(220) A	(210) A	(220) A	200	240 K	220 K	220 K	270 K				
21						Q K	210 HK	240 K	220 K	(210) AK	210 K	200 K	200 K	210 K	(220) AK	200 HK	220 K	230 K	240 K	270 K				
22						Q	210	(230) A	200	180	180	180	170 H	190 H	180 H	200	200	190	210	220				
23						Q	220	220	220	180	170 H	180	180	200	190	190	200	210	230	A				
24						Q	230	200	220	200	220 H	190	190 H	190 H	200	180 H	210	220	(230) A	240				
25						Q	240	200 H	190 H	210	190 H	180	170 H	180	210 H	200	190 H	230	220	240				
26						Q	250	(230) A	220	210	180	180	190	200	190 H	A	[220] A	230	[230] A	230				
27						Q	220	210	220 H	210	(200) A	(190) A	180	A	A	(210) A	210	230	210 H	A				
28						Q	200	190	200	200	[200] A	170 H	190 H	180 H	210	[220] A	(240) A	220	220	A				
29						Q	210	A	A	230	200	210	(210) A	200	190	180 H	210	220	240	250				
30						Q	240	(230) A	210	210	200 H	190	210	190 H	200 H	200	190 H	200	210	250				
31						Q	220 H	250	210	200	200	190 H	170 H	210	230	220	210	220	230	230				
Median						–	220	220	200	200	200	190	190	200	200	200	210	220	230	240				
Count						3	26	27	26	24	24	24	24	27	25	23	26	24	23	16				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 62

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Form adopted June 1946

IONOSPHERIC DATA

foF1 (Characteristic), Mc (Unit), July (Month), 1952

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F. J. Mc., A.C.K., E.J.W.

Calculated by: F. J. Mc., A.C.K., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						Q	A	L	A	A	A	A	4.6	4.5H	4.5	4.3	4.2H	3.8H	L	L				
2						Q	L	3.7	3.9	4.0	4.3	4.4H	4.5	4.5	4.4	4.3	4.2	A	A	A				
3						A	A	A	A	A	4.3	A	A	C	A	4.4	A	3.9	A	A				
4						Q	3.1	3.6	3.8	A	A	A	A	4.3	[4.2]A	4.1	[4.0]A	3.8	3.4	A				
5						QK	LK	3.3K	3.6K	3.8K	3.9K	3.9K	4.1K	4.1K	4.1K	4.1K	3.9HK	3.8K	LK	AK				
6						QK	LK	3.5K	3.8K	4.0K	4.2K	4.2H	4.3	4.3H	4.2H	(4.1)A	4.0H	3.7H	3.4	A				
7						Q	3.5	3.7H	4.0H	[4.2]A	4.3H	4.4H	4.4	4.5H	4.3	4.3H	4.1	A	A	A				
8						Q	(3.3)L	3.7	A	A	A	A	4.5H	4.4	4.3H	4.2	4.1H	[3.8]A	3.5	L				
9						QK	3.3K	3.6FK	3.8K	3.9K	4.1HK	4.3HK	4.3K	4.4K	4.3K	AK	AK	AK	LK	LK				
10						AK	AK	3.5K	3.9K	4.0K	[4.1]AK	4.2K	AK	AK	4.2	[4.0]A	3.9	3.8	A	A				
11						Q	L	3.7H	4.0	4.1H	4.2H	A	A	4.3	[4.2]A	4.2H	4.1H	3.8	A	L				
12						L	L	3.7	4.0	4.1	[4.2]A	(4.3)A	4.4H	4.5H	4.3	4.3	4.2	3.9	3.5	L				
13						A	L	3.8	(3.9)A	4.3	A	A	A	4.5H	4.4	4.4	4.2H	3.7	3.4	A				
14						1.9	[2.8]L	3.7	4.1	A	A	4.4H	4.5H	4.4	4.3	4.3	4.2	3.9	3.5	A				
15						Q	3.4	3.8	4.1	4.3H	4.4H	4.4	4.5	4.5	4.4	A	A	A	A	L				
16						Q	(3.6)L	3.8H	4.0	4.2H	4.3H	4.5H	4.5H	4.5	[4.4]S	4.3	4.1	4.0	3.5	L				
17						Q	Q	L	4.3	4.3	4.3	4.4A	4.5	4.5	4.4	4.3	4.2	3.9	3.3	A				
18						Q	3.4	[3.7]L	4.0H	4.1	4.4	[4.4]A	4.5	4.5	4.5	4.3	4.2	3.9	3.5	L				
19						L	3.2	3.9H	A	A	A	4.5	[4.6]A	4.6	4.5H	4.4H	4.2H	3.9	L	A				
20						A	L	3.7	3.9H	4.2	4.4	4.4	4.4	4.4	4.4	4.1	3.9K	3.8K	3.2K	LK				
21						QK	3.3HK	3.5K	3.9K	3.9K	4.1K	4.1K	4.2K	4.3K	(4.2)PK	4.0HK	3.9K	3.8K	3.4K	LK				
22						Q	L	3.6	3.9	4.0	4.1	4.2	4.3H	4.3H	4.3H	4.2	4.0	3.7	3.2	3.4				
23						Q	L	3.5	3.9	4.1	4.2H	4.3	4.3	4.3	[illegible]	4.2	4.0	3.8	3.4	A				
24						Q	(3.1)L	3.7	3.9	4.1	4.2H	4.4	4.4H	4.3H	[illegible]	4.2H	4.1	3.8	–	[illegible]				
25						Q	L	3.5H	(3.7)L	4.1	4.2H	4.3	4.4H	4.3	4.2	4.1	4.1H	3.9	3.4	[illegible]				
26						Q	3.5	(3.6)L	3.9	4.1	4.1	4.2	4.2	4.2	4.2	4.0	[3.9]A	3.8	A	L				
27						Q	3.4	3.7	3.9H	4.2	4.2	4.3	4.3	A	A	4.2	4.1	3.8	3.2H	A				
28						Q	3.3	(3.4)L	3.8	4.0	[4.2]A	4.3H	4.3H	4.3H	4.2	[4.1]A	4.0A	3.8	3.5	L				
29						Q	2.8	A	A	4.2	4.3	4.4	4.4	4.3	4.3	4.3H	4.0	3.8	3.4	L				
30						Q	L	3.6	4.0	4.2	4.4H	4.4	4.5	4.4H	4.3H	4.3	4.0H	3.8	3.4	L				
31						Q	L	3.5	3.9	4.1	4.3	4.3H	4.4H	4.4	4.3	4.2	3.9	3.8	3.3	L				
Median						–	3.3	3.7	3.9	4.1	4.2	4.3	4.4	4.4	4.3	4.2	4.1	3.8	3.4	–				
Count						1	15	27	26	25	25	25	26	28	29	29	28	27	19	1				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 63

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

h'E (Characteristic), Km (Unit), July (Month), 1952

Observed at Washington, D. C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W., A.C.K.

Calculated by: F.J.Mc., E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	100	100	100	100	100	100	100	110	110	110	110	110	110				
2						A	120	110	110	100	110	100	110	100	110	110	110	110	110	120				
3						120	110	100	100	100	100	A	A	C	110	100	110	110	110	120				
4						100	110	110	110	100	[100]A	100	100	100	100	110	110	110	110	120				
5						120K	110K	100K	100K	100K	100K	100K	100K	100K	100K	110K	[110]BK	110K	110K	120K				
6						120K	110K	110K	AK	AK	100K	100	100	110	110	[110]B	110	110	110	120				
7						110	110	110	100	100	100	100	100	100	100	110	110	110	110	A				
8						110	110	110	100	100	100	110	110	100	100	110	110	110	110	120				
9						110K	110K	110K	100K	[100]÷	100K	100K	100K	100K	100K	100K	100K	100A	110K	SK				
10						110K	[100]AK	100K	100K	100K	100K	100K	100K	100K	100	100	100	100	110	120				
11						A	110	100	[100]A	(100)A	100	100	100	100	100	100	100	100	[100]A	110				
12						110	110	100	100	100	[100]B	100	100	100	100	100	100	110	100	110				
13						A	100	100	100	100	100	100	100	100	100	100	100	110	100	120				
14						120	100	100	100	100	100	100	110	100	100	100	100	110	110	130				
15						120	110	110	110	110	100	110	100	110	110	110	110	110	120	120				
16						A	110	110	100	100	100	100	100	110	110	100	100	100	100	A				
17						S	100	100	100	100	100	100	100	100	100	100	100	100	100	110				
18						100	100	100	100	100	100	100	100	100	100	100	100	110	110	110				
19						120	110	100	100	100	100	100	100	100	100	100	100	100	110	A				
20						A	A	100	100	100	100	100	100	100	100	100	100K	100K	110K	120K				
21						120K	120K	100A	100K	100K	100K	100K	100K	100K	100K	100K	100K	100K	110K	120K				
22						120	110	110	110	110	100	100	100	100	100	100	110	110	110	130				
23						130	110	110	110	110	110	100	100	100	100	110	110	110	120	120				
24						130	110	110	110	110	110	100	100	100	110	110	110	110	120	120				
25						120	110	110	110	100	100	100	100	100	110	100	110	110	110	120				
26						120	110H	100	100	100	100	110	100	100	100	100	100	110	110	130				
27						A	110	110	110	110	110	110	100	100	100	110	100	110	110	120				
28						120	110	110	100	110	110	110	100	110	110	110	110	110	110	110				
29						A	A	110	110	110	110	110	100	(100)A	(100)A	(110)A	110	(110)A	(110)A	120				
30						A	120	110	110	110	110	110	110	110	110	110	110	110	110	A				
31						S	110	110	100	110	110	110	110	110	110	100	100	110	120	130				
Median						120	110	110	100	100	100	100	100	100	100	100	110	110	110	120				
Count						20	28	31	30	30	31	30	30	30	31	31	31	31	31	26				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 702519

Form adopted June 1946

TABLE 64

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

foE (Characteristic), Mc (Unit), July (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long. 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W., A.C.K.

Calculated by: F.J.Mc., E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	A	A	A	A	3.3	3.2	3.0	2.7	2.3	A				
2						A	A	A	2.8	3.0	3.3	3.4	3.4	3.3	3.3	3.2	3.0	2.9	2.5	A				
3						S	2.1	[2.5]A	2.8	A	A	A	A	C	A	A	A	2.7	2.4	A				
4						S	A	2.5	2.8	3.0	[3.1]A	3.2	3.3	3.4	3.1	3.2	3.0	2.7	2.3	S				
5						(1.4)SK	[2.0]AK	2.5K	2.8K	3.0K	3.0K	AK	AK	3.3K	[3.2]AK	3.1K	[2.9]BK	2.7K	2.2K	AK				
6						(1.4)SK	1.9K	2.5K	AK	AK	3.2K	A	A	A	A	B	3.0	2.6	2.2	A				
7						S	A	A	2.8	A	A	A	A	A	A	A	3.0	2.7	2.3	A				
8						A	A	A	A	A	A	A	A	3.3	3.3	3.3	3.0	[2.6]A	2.3	1.8				
9						SK	1.9K	[2.4]AK	2.8K	(3.0)AK	AK	AK	AK	3.3K	AK	AK	AK	AK	AK	AK				
10						AK	AK	AK	AK	AK	AK	AK	AK	AK	A	A	A	2.8	2.5	A				
11						S	A	2.5	[2.8]A	3.0	3.2	3.3	A	A	A	A	A	A	A	A				
12						A	A	A	A	A	B	A	A	3.3	[3.2]A	3.2	[3.0]A	2.8	A	A				
13						A	A	2.6	A	A	A	A	A	A	3.4	3.3	3.2	(2.9)P	A	A				
14						S	A	2.6	A	A	A	A	(3.4)P	3.4	3.3	3.2	3.0	2.7	2.4	A				
15						S	2.0	2.4	A	A	3.3	3.4	3.4	3.4	A	A	A	2.8	2.3	A				
16						A	A	2.5	2.8	A	A	A	A	A	A	3.3	3.1	2.8	2.4	A				
17							A	A	3.0	A	A	A	A	A	A	A	A	2.8	2.4	A				
18						A	A	A	A	A	A	A	A	A	3.3	3.2	A	A	A	A				
19						S	A	A	2.9	3.1	3.2	A	A	A	3.4	3.3	3.2	2.9	2.4	A				
20						A	A	A	A	3.1	A	A	A	A	A	3.2	[3.0]AK	2.8K	2.3K	1.7K				
21						1.5K	[1.9]AK	2.4K	[2.6]AK	2.9K	[3.1]AK	3.3K	AK	AK	AK	AK	3.0K	2.7K	2.3K	AK				
22						S	2.0	2.3	2.7	A	A	A	A	3.3	3.2	A	A	2.7	2.3	1.8				
23						S	A	A	A	A	(3.2)P	(3.3)P	[3.4]A	(3.4)P	3.3	[3.1]A	2.9	2.6	2.3	S				
24						S	2.0	2.5	2.8	3.0	A	A	A	A	(3.3)P	3.1	3.0	2.7	2.2	A				
25						S	A	(2.4)A	2.7	2.9	A	A	A	3.3	3.2	3.1	3.0	A	A	A				
26						S	2.2H	A	A	A	A	3.3	3.4	3.3	3.2	3.0	2.8	A	A	S				
27						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
28						S	A	2.5	[2.8]A	3.0	A	A	3.4	[3.4]A	3.3	3.2	3.0	A	A	A				
29						A	A	A	A	A	A	A	A	A	A	A	2.9	A	A	S				
30						S	A	(2.5)A	2.8	A	A	3.4	[3.4]A	3.4	3.3	A	A	A	A	S				
31						S	A	2.6	2.8	3.2	A	A	A	3.4	3.3	3.2	3.0	2.7	2.2	S				
Median						—	2.0	2.5	2.8	3.0	3.2	3.3	3.4	3.3	3.3	3.2	3.0	2.7	2.3	—				
Count						3	9	17	17	12	9	8	8	15	18	18	21	22	20	3				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 65

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

IONOSPHERIC DATA

Es (Characteristic), Mc,Km (Unit), July (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by F.J.Mc., E.J.W., A.C.K.

Calculated by: F.J.Mc., E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	55 110	77 110	65 110	45 110	50 110	56 110	70 100	73 110	75 100	110 110	[illegible] 110	153 110	64 110	65 120	4.5 130	G	G	G	G	25 110	E	13 110	E	[illegible]
2	86 110	78 100	47 100	40 100	70 110	40 110	150 110	42 120	G	G	G	G	G	70 120	G	41 130	G	37 140	55 130	70 120	71 [illegible]	45 110	[illegible]	[illegible]
3	60 100	42 100	22Y 100	E	36 110	40 110	52 120	70 110	86 H 110	112 100	45 110	75 [illegible]	69 110	G	72 110	70 [illegible]	62 110	38 130	[illegible]	105 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	58 [illegible]	54 110	41 110	71Y 100	41 110	38 120	31 120	50 120	55 120	70 110	[illegible]	56 120	63 120	G	56 130	55 130	84 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]
5	[illegible]	[illegible]	[illegible]	E	E	G	[illegible] 110	G	[illegible]	G	G	38 [illegible]	[illegible]	G	32 [illegible]	G	[illegible]	G	[illegible]	51 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	G	G	47 110	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	35 [illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible] 100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	E	E	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
15	E	E	22 130	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
16	42 110	31 110	23 110	21 [illegible]	[illegible]	[illegible]	30 120	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] 110	[illegible] 110	[illegible]	[illegible]	41 [illegible]	[illegible]	43 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
17	E	23 100	E	33 110	E	G	36 110	[illegible]	[illegible]	[illegible]	68Y 110	54 110	90 [illegible]	42 120	44 [illegible]	30 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
18	43 100	43 100	52 100	46 100	48 [illegible]	35 100	36 100	53 H [illegible]	50 120	45 110	57 120	80 100	60 [illegible]	50 100	68 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	40 [illegible]	[illegible]	[illegible]	40 110	3[illegible]
19	43 H 110	40 H 100	E	14 110	E	E	24 110	80 110	59 110	125 110	[illegible] 110	8 120	74 100	53 100	[illegible]	G	[illegible]	[illegible]	41 120	3[illegible]	38 110	E	E	E
20	E	E	E	29 120	38 100	43 100	43 100	46 110	47 110	46 110	56 110	63 110	78 100	68 100	[illegible]	72 130	62 H 130	G	45 120	G	E	E	E	E
21	E	E	E	E	E	G	29 120	38 120	40 110	50 100	33 100	G	42 110	46 100	72 100	42 [illegible]	28 100	G	34 120	45 110	35 110	E	E	E
22	E	E	E	E	50 120	28 110	29 100	48 110	38 120	4.6 110	100 120	66 H 110	44 110	40 130	G	38 110	40 110	37 110	G	25 120	31 120	24 120	30 110	25 110
23	E	E	E	30 110	E	E	30 120	46Y 130	60 110	45 110	G	G	35 100	G	G	44 110	[illegible] 130	85 120	37 130	24 120	24 120	[illegible] 110	25 110	30 110
24	26 110	22 110	25 110	E	E	40 110	G	42 120	G	G	4.2 120	48 110	42Y 110	50 110	G	G	G	41 130	46 120	33 120	37 110	33 110	23 110	E
25	2.2 130	E	E	E	82Y 110	35 H 110	30 120	36 120	38 120	40 120	38 110	41 110	73 110	46 110	G	74 120	66 120	52 120	60 110	40 120	47 120	35 H 130	E	33 120
26	3.5 120	33 100	42 110	E	72Y 110	G	G	42 110	38 110	46 100	39 110	G	G	53 120	G	66 120	100 110	41 120	45 110	G	E	54 110	47 110	35 110
27	35 110	90 100	4.3 100	40 100	41 110	50 110	40 110	50 110	76 110	67 H 120	90 110	74 110	68 110	100 H 100	58 100	52 110	45 110	5.0 110	30Y 110	30 110	30 110	E	E	23 110
28	E	E	E	E	E	G	64Y 130	G	36 120	G	62 110	80Y 110	G	50 110	G	74 120	66 110	71 120	32 130	3.0 110	40 110	35 110	E	E
29	42 110	3.0 100	45 110	60 H 110	56 100	5.0 110	50 110	80 H 110	7.8 110	53 110	48 100	120 110	51 100	46 110	40 110	40 110	G	39 110	31 120	2.0 120	60 120	80 110	66 110	50 110
30	6.8 110	54 110	68 H 100	40 110	150 110	27 110	36 120	4.2 120	45 120	55 120	73Y 110	50 110	41 110	G	46 110	44 110	44 110	4.3 110	36 100	30 100	32 100	2.3 110	E	E
31	4.8 120	27 110	70 H 110	4.6 120	4.0 110	G	66Y 110	38 110	G	G	70Y 120	41 110	40 110	G	32 120	G	G	G	G	20 130	22 120	E	E	E
Median	3.0	27	25	30	4.0	30	36	42	47	5.0	56	5.5	53	46	44	46	45	39	41	37	33	35	2.7	30
Count	31	31	31	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

TABLE 66

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

(M1500)F2 (Characteristic), ____ (Unit), July (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W., A.C.K.

Calculated by: F.J.Mc., E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	1.9	(2.0)S	2.0	1.9	(1.9)FS	(2.0)F	2.2	2.1FH	2.2	2.1	2.0H	A	2.3	2.1	2.1	2.0	2.0	1.9	2.0	2.2	2.0	1.9	2.1	2.0
2	2.0	1.9	1.9F	1.9F	(1.8)AS	1.9F	2.2H	G	1.5	1.7	2.0	2.2	1.7	1.5	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.1	2.1F	2.1
3	2.0F	2.0F	2.1F	2.1F	2.1F	(2.2)A	(1.7)AH	2.2	2.0	A	1.7	A	2.1	C	2.0	2.0	2.0	2.0	2.0	A	2.0	2.1F	1.9FS	2.1F
4	(2.0)SA	2.0	2.0F	2.0F	1.9F	2.0	1.5	1.9	1.5	A	2.0	1.6	A	1.9	1.7	1.9	A	1.9	2.0	2.2	2.2F	2.1	(2.0)SK	2.0FK
5	1.8K	AK	(1.6)SK	(1.7)FK	K(1.8)FS	2.0FK	2.4K	1.5K	GK	GK	GK	GK	GK	1.6K	1.8K	1.8K	1.7K	1.8K	2.0K	2.1K	2.3K	AK	(2.0)AK	K(2.0)AS
6	1.7FK	1.8K	1.8FK	K(1.7)AS	1.9FK	2.3FK	2.3FK	(1.8)FK	GK	1.5K	1.5K	1.7H	1.6	1.9	1.9	1.9	1.9	1.9	2.0H	A	A	A	A	A
7	2.0F	2.0F	(2.2)F	A	(1.9)S	2.3F	2.2	1.8H	2.1H	2.4	2.2	2.0H	2.0	2.0H	2.0	1.8	1.9	2.1	2.1	2.2	2.1	(2.2)AF	(2.0)AF	2.0
8	2.0F	2.1F	2.1F	2.0F	2.0F	(2.3)A	2.2	1.9	2.2F	A	A	2.0	1.8	1.9	1.8H	1.9	1.9	2.0	2.0	2.3	2.1	2.0	1.9	1.9
9	2.0	2.0	2.0	(1.9)AS	1.9	2.4K	GK	GK	GK	GK	1.5K	2.0K	1.9HK	1.6K	(1.7)SK	AK	ASK	2.0HK	2.2HK	2.3K	2.3FK	K(2.2)AJ	K(2.0)FS	1.9FK
10	2.0FK	2.0FK	1.9FK	AK	AK	2.1K	AK	GK	GK	1.5K	2.0K	GK	AK	AK	1.8	1.8F	1.9	1.9	2.1	(2.0)A	2.1	2.0	2.0	1.9
11	1.9	1.9F	1.8F	1.9F	2.0F	1.9	2.3	1.9	(1.7)F	G	G	(1.6)HS	A	1.8	1.9	1.9	2.1	2.3	2.3	2.3	2.2	2.0	2.0	2.0
12	2.1	2.1	2.0	2.0	2.2	2.5	2.3	(2.2)H	(2.3)H	2.0	(2.1)A	2.3	2.2	2.0	2.1	2.1	2.1	2.0	2.1	2.2	2.2	2.2	2.1F	A
13	2.0	2.1	A	A	(1.9)AF	(2.1)A	(2.3)H	2.1	2.4	2.1	2.3	(2.1)H	1.9H	2.0	2.1	2.1	2.1	2.3	2.3	2.2	2.2	2.1	2.1	1.9
14	2.0	2.2F	2.1	2.0	1.9	2.0	1.9	2.2	1.9	2.2	1.7	2.0	1.7	1.7	1.8	1.8	1.8	2.0	2.1	2.2	2.2	1.8	1.9	1.9
15	1.9	2.0	2.0	2.0	1.9	1.9	2.1	2.0H	2.3H	2.5	2.3	1.9H	1.8	2.0	1.9	1.9	A	2.0	2.1	2.1	2.0	2.0	2.0	2.0
16	2.0F	2.1F	2.2	1.9F	1.9F	2.2	(2.2)S	2.4H	1.9	1.9	1.9	2.0	1.8	2.1	S	1.9	2.0	(2.0)JS	2.0	2.1	2.2	2.1	(2.2)JS	2.1
17	2.0	2.0	2.0	2.0	(2.2)JS	2.3	2.4	2.3	2.2	2.0	2.4	2.2	2.0	1.9H	2.2	2.2	2.2	2.0H	2.1	2.1	2.2	2.2	2.0	2.0
18	1.9	2.0	2.0	2.2	2.1	2.3	2.1	2.4H	2.1H	2.1H	1.8H	2.0	2.0H	2.0	1.9	2.2	1.9	2.1	2.1	2.1	2.2	2.0	2.1F	(2.1)F
19	2.1F	(2.1)F	(2.0)F	(2.0)F	(2.0)F	2.3	2.2	2.2H	2.4H	A	(2.1)A	2.3	A	2.0	1.9	2.0H	2.1	2.1	2.1	2.2	2.1	2.0	2.0	2.0
20	2.0	2.0	2.0	2.1F	2.0F	2.0	1.9	1.9	2.0H	2.1	1.9	1.9H	1.7H	2.1	1.9	2.0	1.8K	1.9K	1.9K	1.9K	2.1K	2.0K	1.9K	1.9K
21	1.8K	2.1K	2.2YK	2.0FK	1.8K	2.0K	GK	1.9K	GK	GK	GK	1.7K	1.7K	1.6K	1.7K	1.7K	1.6K	1.9HK	2.0K	2.0FK	2.0	2.0	2.1	2.0
22	2.1	2.0F	1.9	2.0	2.0	2.1	2.5	(1.7)S	1.8H	G	1.6	G	1.7H	1.5	1.7	2.1	2.0	2.0	2.2	2.0	2.1	2.1	2.1	2.1
23	2.0	2.0	2.0H	(1.9)S	(1.9)JS	2.1	1.8	2.0	1.9	1.8H	2.0	2.0	1.7	1.9	2.0	2.2	2.1	1.9	2.1	2.0	2.2	(2.0)FS	2.1	2.0
24	2.2	2.0	2.0F	2.1F	(1.9)S	2.0	1.9	2.0	2.1	2.2H	2.1	1.9	1.8H	1.8	2.1	1.9	1.9	2.1	2.0	2.2	2.2	2.3	2.2	2.1
25	2.0	2.0	2.1	2.0	(2.0)SF	2.3	2.4H	(1.9)S	1.8	2.1	1.9	1.9	1.7H	1.9	2.0	2.1H	1.9	2.0	2.0	2.2	2.0	2.3	2.0	2.0
26	1.9H	2.2	1.9F	2.0F	2.0	(2.2)S	G	1.9	2.0	(2.1)P	G	1.3	G	1.5	1.8	1.8H	A	2.0	2.1	2.3	2.1	(2.0)A	2.0	2.2
27	2.1	2.0	2.2	(2.1)SA	1.9	2.1	2.0	2.0	2.1	2.0	1.9	1.9	2.0	A	1.9	2.0	2.0	2.1	2.0	2.0	2.3	2.2	2.3V	2.0
28	2.0	1.9	2.0	2.1	2.2	2.1	G	2.3	1.6	2.1	2.0	(1.6)P	1.5	G	1.6	(1.8)A	1.2	2.0	2.0	2.1	2.1	2.1	(2.0)S	(2.0)FS
29	1.9F	2.0F	2.0F	(2.0)F	(2.0)F	(2.4)F	2.4	2.1	2.2	2.0H	2.0H	2.0	2.0	2.1	2.2	1.8H	2.0	2.1	2.2	2.2	2.2	A	(2.1)FS	(2.1)S
30	2.1	2.0	2.2F	2.0	2.0	2.3	2.3	2.0	1.9	2.2	2.3	2.0H	1.9	2.0	2.1	1.9	2.2	2.1	2.1	2.1	2.2	2.2	2.1	(2.1)S
31	2.2	2.1F	2.0F	2.0F	(1.9)SF	1.9	2.2H	1.9	1.9	1.7	2.1	1.8	1.7	1.9	2.1	1.9	1.9	2.0	2.1	2.2	2.1F	2.1	2.1	2.0
Median	2.0	2.0	2.0	2.0	1.9	2.1	2.2	2.0	1.9	2.0	2.0	1.9	1.8	1.9	1.9	1.9	2.0	2.0	2.1	2.2	2.2	2.1	2.0	2.0
Count	31	30	30	28	30	31	30	31	31	27	30	29	27	28	30	30	27	31	31	29	30	28	30	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U S GOVERNMENT PRINTING OFFICE 1946 O - 702519

Form adopted June 1946

TABLE 67

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M3000)F2 (Characteristic), ______ (Unit), July (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.Mc., A.C.K., E.J.W.

Calculated by: F.Mc., A.C.K., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	2.9	(3.0)S	3.0	2.8	(2.8)FS	(3.0)F	3.2	3.1FH	3.2	3.1	3.0H	A	3.3	3.1	3.1	3.0	3.0	2.8	3.0	3.2	3.0	2.9	3.1	3.0
2	3.0	2.9	2.9F	2.9F	(2.7)AS	2.9F	3.2H	G	2.2	2.6	3.0	3.2	2.6	2.3	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1F	3.1
3	3.0F	3.0F	3.1F	3.1F	3.1F	(3.2)A	(2.6)AH	3.2	3.0	A	2.6	A	3.1	C	3.0	3.0	2.9	3.0	3.0	A	3.0	3.1F	2.9FS	3.0F
4	(3.0)SA	3.0	3.0F	2.9F	2.9F	3.0	2.3	2.9	2.2	A	3.0	2.4	A	2.8	2.6	2.9	A	2.8	3.0	3.2	3.2F	3.1	(3.0)SK	3.0FK
5	2.7K	AK	(2.5)SK	(2.6)FK	K(2.7)FS	3.0FK	3.5K	2.3K	GK	GK	GK	GK	GK	2.4K	2.8K	2.7K	2.6K	2.7K	3.0K	3.1K	3.3K	AK	(3.0)AK	K(2.0)AS
6	2.6FK	2.7K	2.7FK	K(2.6)FS	2.8FK	3.3FK	3.3FK	(2.7)FK	GK	2.3K	2.3K	2.6H	2.4	2.9	2.9	2.8	2.9	2.9	3.0H	A	A	A	A	A
7	3.0F	3.0F	(3.2)F	A	(2.9)S	3.3F	3.2	2.7H	3.1H	3.5	3.2	3.0H	3.0	3.0H	3.0	2.7	2.9	3.1	3.1	3.2	3.1	(3.2)AF	(3.0)AF	3.0
8	3.0F	3.1F	3.1F	3.0F	3.0F	(3.3)A	3.2	2.9	3.2F	A	A	3.0	2.7	2.9	2.7H	2.9	2.9	3.0	3.0	3.3	3.1	3.0	2.9	2.8
9	3.0	3.0	3.0	(2.9)AS	2.9	3.5K	GK	GK	GK	GK	2.3K	3.0K	2.9HK	2.5K	(2.6)SK	AK	ASK	3.0HK	3.2HK	3.3K	3.3FK	K(3.2)AS	K(3.0)FS	2.9FK
10	3.0FK	3.0FK	2.9FK	AK	AK	3.1K	AK	GK	GK	2.2K	3.0H	GK	AK	AK	2.7	2.7F	2.8	2.9	3.1	(3.0)A	3.1	3.0	3.0	2.9
11	2.8	2.9F	2.8F	2.9F	3.0F	2.9	3.4	2.9	(2.6)P	G	G	(2.5)HS	A	2.7	2.8	2.8	3.1	3.3	3.3	3.4	3.2	3.0	3.0	3.0
12	3.1	3.1	3.0	3.0	3.2	3.6	3.4	(3.2)H	(3.4)H	3.0	(3.1)A	3.3	3.2	2.9	3.1	3.1	3.1	3.0	3.1	3.2	3.2	3.2	3.1F	A
13	3.0	3.1	A	A	(2.9)A	(3.1)A	(3.3)H	3.1	3.4	3.1	3.3	(3.1)H	2.9H	3.0	3.1	3.1	3.1	3.3	3.3	3.2	3.2	3.1	3.1	2.9
14	3.0	3.2F	3.1	3.0	2.9	2.9	2.9	3.2	2.8	3.2	2.6	3.0	2.6	2.6	2.7	2.7	2.7	3.0	3.1	3.2	3.2	2.7	2.8	2.9
15	2.9	3.0	3.0	3.0	2.8	2.9	3.1	3.0H	3.4H	3.6	3.4	2.9H	2.7	3.0	2.8	2.9	A	3.0	3.1	3.1	3.0	3.0	3.0	3.0
16	3.0F	3.1F	3.2	2.9F	2.8F	3.2	(3.2)S	3.4H	2.9	2.9	2.9	3.0	2.7	3.1	S	2.9	3.0	(3.0)JS	3.0	3.1	3.2	3.1	(3.2)JS	3.1
17	3.0	2.9	3.0	3.0	(3.2)JS	3.4	3.5	3.4	3.2	3.0	3.4	3.2	3.0	2.9H	3.2	3.2	3.2	3.0H	3.1	3.1	3.2	3.2	2.9	3.0
18	2.9	3.0	3.0	3.2	3.1	3.4	3.1	3.5H	3.1H	3.1H	2.7H	3.0	2.9H	3.0	2.9	3.2	2.9	3.1	3.1	3.1	3.2	3.0	3.1F	(3.1)F
19	3.1F	(3.1)F	(3.0)F	(3.0)F	(3.0)F	3.3	3.2	3.2H	3.5H	A	(3.1)A	3.4	A	3.0	2.9	3.0H	3.1	3.1	3.1	3.2	3.1	3.0	3.0	3.0
20	3.0	3.0	3.0	3.1F	3.0F	3.0	2.8	2.9	3.0H	3.1	2.9	2.9H	2.6H	3.1	2.8	3.0	2.7K	2.9K	2.9K	2.9K	3.1K	3.0K	2.9K	2.9K
21	2.7K	3.1K	3.2KV	2.9FK	2.7K	2.9K	GK	2.9K	GK	GK	GK	2.6K	2.6K	2.4K	2.6K	2.6K	2.5K	2.9HK	2.9K	3.0FK	3.0	3.0	3.1	3.0
22	3.1	3.0F	2.9	2.9	2.9	3.1	3.3	(2.6)S	2.7H	G	2.5	G	2.6H	2.3	2.6	3.1	3.0	3.0	3.2	3.0	3.1	3.1	3.1	3.1
23	3.0	3.0	3.0H	(2.9)S	(2.8)JS	3.1	2.7	3.0	2.9	2.7H	3.0	3.0	2.6	2.9	3.0	3.2	3.1	2.8	3.1	3.0	3.2	(2.9)FS	3.1	3.0
24	3.2	3.0	3.0F	3.1F	(2.8)S	3.0	2.8	2.9	3.1	3.2H	3.1	2.8	2.7H	2.7	3.1	2.9	2.9	3.1	3.0	3.2	3.2	3.3	3.2	3.1
25	2.9	2.9	3.1	3.0	(3.0)SF	3.3	3.5H	(2.8)S	2.7	3.1	2.8	2.9	2.6H	2.9	3.0	3.1H	2.9	3.0	3.0	3.2	3.0	3.3	2.9	3.0
26	2.9H	3.2	2.8F	3.0F	3.0	(3.2)S	G	2.9	3.0	(3.1)P	G	2.0	G	2.3	2.7	2.7H	A	3.0	3.1	3.4	3.1	(3.0)A	3.0	3.2
27	3.1	3.0	3.2	(3.1)AS	2.9	3.1	3.0	3.0	3.1	3.0	2.8	2.9	3.0	A	2.9	3.0	3.0	3.1	3.0	3.0	3.3	3.2	3.3	3.0
28	3.0	2.9	3.0	3.1	3.2	3.1	G	3.3	2.5	3.1	3.0	(2.5)P	2.3	G	2.4	(2.7)A	2.6	3.0	2.9	3.1	3.1	3.1	(3.0)S	(3.0)FS
29	2.9F	3.0F	3.0F	(2.9)F	(3.0)F	(3.5)F	3.4	3.1	3.2	3.0H	3.0H	3.0	3.0	3.1	3.2	2.7H	3.0	3.1	3.2	3.2	3.2	A	(3.1)FS	(3.1)S
30	3.1	3.0	3.2F	3.0	3.0	3.3	3.3	3.0	2.9	3.2	3.3	3.0H	2.9	3.0	3.1	2.8	3.2	3.1	3.1	3.1	3.2	3.2	3.1	(3.1)S
31	3.2	3.1F	3.0F	3.0F	(2.8)SF	2.8	3.2H	2.8	2.8	2.6	3.1	2.7	2.6	2.8	3.1	2.9	2.8	3.0	3.1	3.2	3.1F	3.1	3.1	2.9
Median	3.0	3.0	3.0	3.0	2.9	3.1	3.2	2.9	2.9	3.0	3.0	2.9	2.7	2.9	2.9	2.9	2.9	3.0	3.1	3.2	3.2	3.1	3.0	3.0
Count	31	30	30	28	30	31	30	31	31	27	30	29	27	28	30	30	27	31	31	29	30	28	30	29

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐, Automatic ☒

TABLE 68

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

Form adopted June 1946

(M3000)F1 (Characteristic), ____ (Unit), July (Month), 1952

Observed at Washington, D.C.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.Mc., E.J.W., A.C.K.

Calculated by: F.J.W., E.J.W., A.C.K.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						Q	A	L	A	A	A	A	A	3.8H	3.9	3.8	3.9H	3.8H	L	L				
2						Q	L	3.5	3.6	4.1	3.7	3.9H	4.0	3.8	3.9	3.7	3.6	A	A	A				
3						A	A	A	A	A	3.8	A	A	C	A	3.5	A	3.5	A	A				
4						Q	3.4	3.7	3.8	A	A	A	A	3.8	A	A	A	3.5	3.5	A				
5						QK	LK	3.6K	3.8K	3.9K	4.1K	4.2K	3.8K	3.9K	3.8K	3.8K	3.6HK	3.4K	LK	AK				
6						QK	LK	3.7K	4.0K	3.9K	3.9K	3.9H	3.9	3.8H	3.9H	(3.7)A	3.8H	3.6H	3.5	A				
7						Q	3.6	3.7H	3.7H	A	3.9H	3.8H	A	3.8H	3.9	3.8F	3.6	A	A	A				
8						Q	(3.7)L	3.6	A	A	A	A	3.9H	3.6	4.0H	3.8	3.7H	A	3.6	L				
9						QK	3.5K	4.0FK	3.9K	4.0K	4.0HK	4.2HK	3.9K	3.8K	3.8K	AK	AK	AK	LK	LK				
10						AK	AK	3.9A	3.8K	4.0K	AK	4.4K	AK	AK	A	A	3.9	3.7	A	A				
11						Q	L	3.8H	4.0	4.2H	4.2H	A	A	4.0	A	3.9H	3.8H	A	A	L				
12						L	L	3.8	4.0	4.0	A	(4.0)A	4.1H	4.1H	4.1	3.9	3.8	3.7	3.7	L				
13						A	L	3.7	(4.0)A	4.0	A	A	A	3.9H	3.9	3.7	3.7H	3.9	3.9	A				
14						3.6	L	3.7	3.9	A	A	4.0H	3.9H	3.8	3.9	3.7	3.7	3.7	3.7	A				
15						Q	3.5	3.8	3.9	3.8H	3.9H	4.0	3.9	3.7	3.8	A	A	A	A	L				
16						Q	(3.5)L	3.6H	3.6	3.8H	3.8H	3.7H	4.0H	3.8	S	3.8	3.6	3.5	3.6	L				
17						Q	Q	L	3.7	4.0	4.2	A	3.9	4.0	3.9	4.0	3.6	3.7	3.7	A				
18						Q	3.5	L	3.8H	4.1	3.7	A	3.8	3.9	A	A	A	A	3.5	L				
19						L	3.7	3.5H	A	A	A	3.8	A	A	3.9	3.8H	3.7H	3.7H	L	A				
20						A	L	3.8	3.8H	3.7	A	3.9	3.9	3.8	3.8	3.9	3.8K	3.5K	3.7K	LK				
21						QK	3.5K	3.5K	3.8K	3.9K	3.9K	3.9K	4.0K	3.9K	(4.0)PK	3.9HK	3.7K	3.6K	3.5K	LK				
22						Q	L	3.8	3.7	4.1	4.0	4.2	4.1H	4.0H	3.8H	3.8	3.6	3.7	3.9	3.9				
23						Q	L	3.8	3.9	4.1	4.0H	4.0	4.1	3.9	3.9	3.7	3.8	3.6	3.6	A				
24						Q	(3.4)L	3.6	3.6	3.7	4.0H	4.0	3.8H	3.9H	4.1	3.7H	3.6	3.5	L	L				
25						Q	L	3.8H	(3.7)L	3.8	4.1H	4.0	3.9H	3.9	4.0H	3.9	3.7H	3.6	3.7	L				
26						Q	3.2	(3.6)L	3.7	3.8	4.1	4.0	3.9	4.2	3.9H	3.9	A	3.5	A	L				
27						Q	3.5	3.7	3.9H	3.7	3.9	4.1	4.2	A	A	3.7	3.7	3.7	3.6H	A				
28						Q	3.3	(3.8)L	3.7	3.9	A	4.3H	4.1H	3.9H	4.0	A	3.7A	3.8	3.5	L				
29						Q	4.0	A	A	3.9	4.0	4.0	3.9	4.0	4.0	3.6H	3.9	3.5	3.7	L				
30						Q	L	3.7	3.8	4.0	3.8H	4.1	3.9	3.9H	3.9H	4.0	3.8H	3.6	3.7	L				
31						Q	L	3.5	3.7	4.1	3.8	4.0	3.8H	3.6	3.7	3.7	3.9	3.6	3.7	L				
Median						—	3.5	3.7	3.8	4.0	3.9	4.0	3.9	3.9	3.9	3.8	3.7	3.6	3.7	—				
Count						1	14	26	26	24	21	23	23	27	24	25	25	24	19	1				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Form adopted June 1946

TABLE 69

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

(M1500)E (Characteristic), ______ (Unit), July (Month), 1952

National Bureau of Standards (Institution)

Observed at Washington, D.C.

Scaled by: F. Mc., A.C.K., E.J.W.

Lat 38.7°N, Long 77.1°W

75°W Mean Time

Calculated by: F. Mc., A.C.K., E.J.W.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						A	A	A	A	A	A	A	A	A	4.2	4.1	4.2	4.3	4.3	A				
2						A	A	A	4.3	4.3	4.2	4.2	4.3	4.2	4.3	4.3	4.3	4.4	4.3	A				
3						S	4.4	A	4.2	A	A	A	A	C	A	A	A	4.1	4.3	A				
4						S	A	4.2	4.3	4.5	A	4.4	4.1	4.1	4.2	4.2	4.2	4.1	4.3	S				
5						(4.1)SK	A K	4.3 K	4.4 K	4.3 K	4.4 K	A K	A K	4.4 K	A K	4.4 K	B K	4.0 K	4.3 K	A K				
6						(4.0)SK	4.2 K	4.4 K	A K	A K	4.4 K	A	A	A	A	B	4.2	4.3	4.4	A				
7						S	A	A	4.3	A	A	A	A	A	A	A	4.3	4.1	4.3	A				
8						A	A	A	A	A	A	A	A	4.4	4.4	4.3	4.3	A	4.4	4.0				
9						S K	4.3 K	A K	4.4 K	(4.4)AK	A K	A K	A K	4.4 K	A K	A K	A K	A K	A K	A K				
10						A K	A K	A K	A K	A K	A K	A K	A K	A K	A	A	A	4.3	4.4	A				
11						S	A	4.5	A	4.2	4.2	4.3	A	A	A	A	A	A	A	A				
12						A	A	A	A	A	B	A	A	4.5	A	4.5	A	4.5	A	A				
13						A	A	4.4	A	A	A	A	A	A	4.3	4.3	4.4	(4.4)P	A	A				
14						S	A	4.4	A	A	A	A	(4.6)P	4.2	4.1	4.2	4.3	4.2	4.2	A				
15						S	4.1	4.4	A	A	4.5	4.4	4.3	4.3	A	A	A	4.3	4.3	A				
16						A	A	4.2	4.3	A	A	A	A	A	A	4.2	4.2	4.3	4.3	A				
17							A	A	4.3	A	A	A	A	A	A	A	A	4.4	4.4	A				
18						A	A	A	A	A	A	A	A	A	4.3	4.4	A	A	A	A				
19						S	A	A	4.4	4.3	4.5	A	A	A	4.4	4.2	4.3	4.3	4.3	A				
20						A	A	A	A	4.4	A	A	A	A	A	4.3	A K	4.2 K	4.4 K	4.0 K				
21						4.1 K	A K	4.3 K	A K	4.6 K	A K	4.4 K	A K	A K	A K	A K	4.3 K	4.3 K	4.4 K	A K				
22						S	4.2	4.4	4.3	A	A	A	A	4.4	4.4	A	A	4.3	4.1	3.8				
23						S	A	A	A	A	(4.4)P	(4.4)P	A	(4.5)P	4.3	A	4.2	4.3	4.1	S				
24						S	4.0	4.2	4.3	4.4	A	A	A	A	(4.1)P	4.3	4.0	4.1	4.4	A				
25						S	A	(4.3)A	4.3	4.4	A	A	A	4.4	4.3	4.4	4.2	A	A	A				
26						S	3.8 H	A	A	A	A	4.4	4.5	4.5	4.3	4.5	4.5	A	A	S				
27						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A				
28						S	A	4.4	A	4.3	A	A	4.2	A	4.1	4.2	4.3	A	A	A				
29						A	A	A	A	A	A	A	A	A	A	A	4.3	A	A	S				
30						S	A	(4.3)A	4.4	A	A	4.3	A	4.4	4.5	A	A	A	A	S				
31						S	A	4.0	4.3	4.3	A	A	A	4.2	4.2	4.3	4.3	4.4	4.3	S				
Median						—	4.2	4.3	4.3	4.4	4.4	4.4	4.3	4.4	4.3	4.3	4.3	4.3	4.3	—				
Count						3	7	15	14	12	7	8	6	14	16	17	18	21	20	3				

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

Table 70

Ionospheric Storminess at Washington, D. C.

July 1952

Day	Ionospheric character* 00-12 GCT	Ionospheric character* 12-24 GCT	Principal storms Beginning GCT	Principal storms End GCT	Geomagnetic character** 00-12 GCT	Geomagnetic character** 12-24 GCT
1	2	2			2	4
2	2	3			3	2
3	1	2			2	3
4	2	3			3	2
5	4	5	0300	----	4	5
6	4	3	----	1600	4	2
7	2	1			3	2
8	1	1			2	2
9	3	4	1000	----	4	3
10	4	4	----	1900	4	3
11	2	3			3	2
12	2	2			3	2
13	2	2			2	3
14	1	3			3	3
15	1	1			4	2
16	1	1			3	2
17	2	1			2	3
18	1	2			2	2
19	1	1			1	2
20	1	3	2100	----	4	4
21	4	4	----	----	5	4
22	1	3	----	0100	3	3
23	2	2			3	3
24	2	2			2	3
25	3	1			2	3
26	2	3			3	2
27	2	1			1	3
28	3	3			2	2
29	2	1			1	1
30	1	2			1	2
31	2	2			3	2

*Ionosphere character figure (I-figure) for ionospheric storminess at Washington, D. C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

----Dashes indicate continuing storm.

Table 71a

Radio Propagation Quality Figures
(Including Comparisons with CRPL Warnings, Short-Term and Advance Forecasts)

June 1952

Day	North Atlantic quality figure		CRPL Warning WWV Broadcast		Short-term forecasts issued about one hour in advance of 12-hour period, UT:				Advance forecasts (J-reports) for whole day, issued in advance by:			Geomagnetic K_{Ch}	
	Half Day UT		Half Day UT		00 to 12	06 to 18	12 to 24	18 to 06	1 to 3/4 days	4/5 to 7 days	8 to 25 days	Half Day UT	
Jun	(1)	(2)	(1)	(2)								(1)	(2)
1	6	8			5	6	7	7	(4)	(4)	X	3	2
2	7	7			6	6	7	7	5	(4)	X	2	2
3	6	8			7	7	7	7	5	(4)	X	2	2
4	6	8			7	7	7	7	7	6		2	1
5	7	7			7	6	7	7	7	7		2	2
6	7	7			7	7	7	6	7	7		3	1
7	7	7			7	7	7	7	5	7		2	2
8	6	6			7	5	6	5	(4)	6		(4)	(4)
9	5	6	U	W	5	5	5	5	(4)	6		(4)	(4)
10	6	7	W	(W)	5	(4)	6	6	6	6		3	3
11	6	7			5	5	7	6	6	6		(4)	3
12	6	7			6	6	7	6	7	6		3	2
13	7	8			6	6	6	7	7	7		1	2
14	7	6			6	6	7	6	6	5		3	(4)
15	5	7	U	U	5	(4)	5	5	6	5		(4)	3
16	6	6	U	U	5	5	6	5	6	6		(4)	3
17	7	6			5	5	6	5	7	6		(4)	2
18	7	8			6	5	6	6	6	7		3	3
19	7	7			6	6	7	7	7	7		2	2
20	7	7			7	7	7	7	7	7		2	2
21	7	8			6	6	7	7	7	6		1	2
22	7	7			6	6	6	6	6	6		2	(4)
23	6	6	U	U	5	5	6	5	5	5		(5)	(4)
24	5	7	U	U	5	(4)	5	5	5	5		(5)	(4)
25	6	8			5	6	6	6	(4)	5		2	3
26	6	6		U	6	5	6	5	5	6		3	3
27	6	7	U	U	5	5	6	5	5	6		3	3
28	7	8	U		5	5	6	7	6	6		2	2
29	8	7			6	6	7	7	5	6		2	3
30	(3)	5	W	W	(4)	(4)	(4)	(4)	5	6		(6)	3
Score:													
P					9		14		7	9			
S					27		23		17	18			
H			4		1		0		0	0			
(M)					0		0		0	0			
M			0		0		0		1	1			
(O)					0		1		0	0			
O			14		0		0		4	3			
G			42		29		29		25	26			

Scales:

Q-scale of Radio Propagation Quality

(1) - useless
(2) - very poor
(3) - poor
(4) - poor to fair
5 - fair
6 - fair to good
7 - good
8 - very good
9 - excellent

K-scale of Geomagnetic Activity

0 to 9, 9 representing the greatest disturbance; $K_{Ch} \geq 4$ indicates significant disturbance, enclosed in ( ) for emphasis

Symbols:

W- disturbed; U- unsettled; N- normal, left blank in Table; ( ) broadcast for one quarter day. X- probable disturbed date.

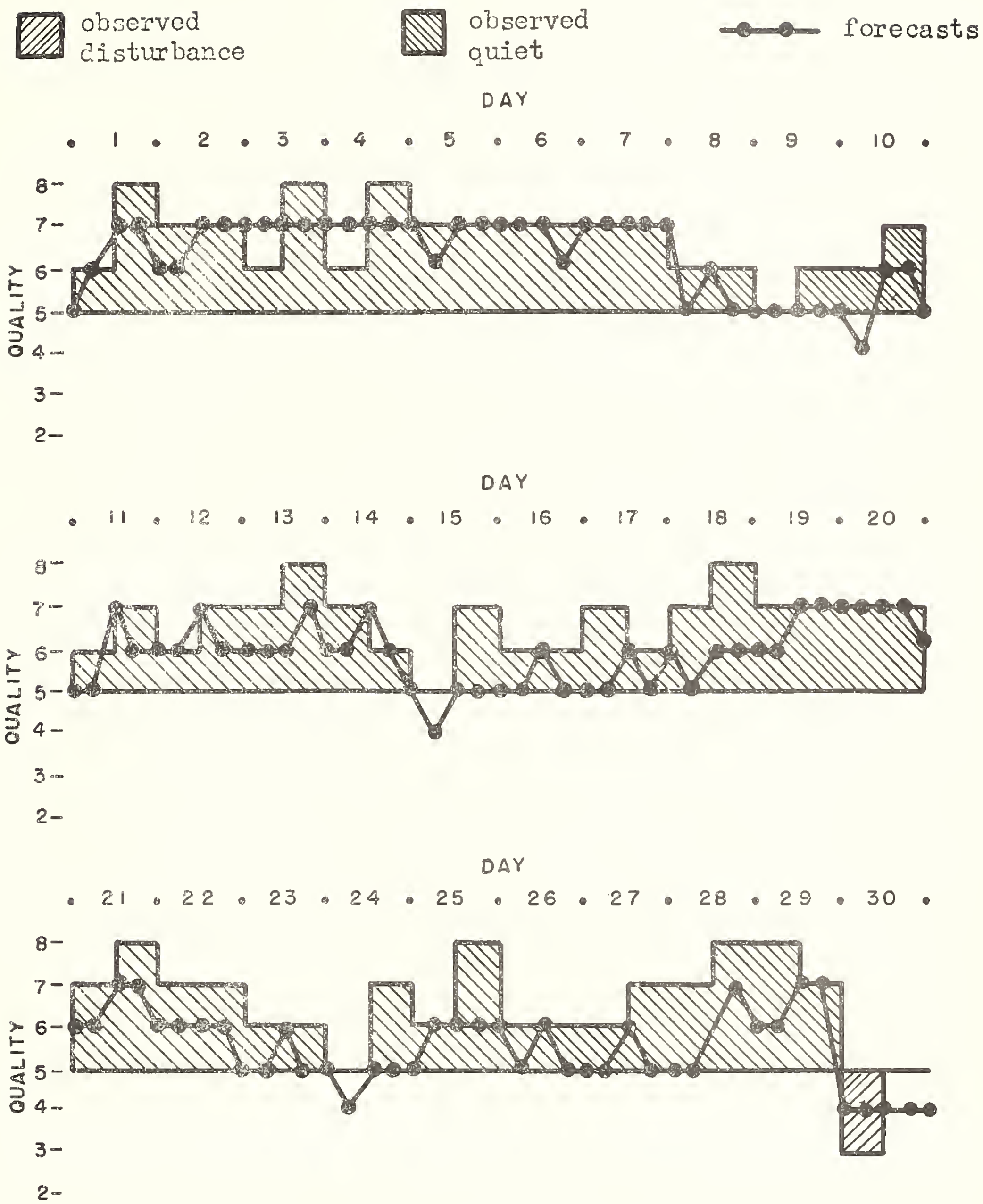
Scoring:

P - Perfect forecast; observed equal to forecast
S - Satisfactory forecast; P plus other times correctly designated as disturbed or quiet, within one grade
H - Storm (Q≤4) hit, except (M)
(M)- Storm hit, severity underestimated by two grades or a 5 forecast for Q=4 day
M - Storm missed
(O)- Overwarning on observed fair day
O - Other overwarnings
G - Good (quiet) day forecast

Note: See above for scoring legend, scales and symbols, see text for scoring conventions and other information.

Table 71b

Short-Term Forecasts--June 1952



Advance Forecasts (1 to 3/4 days ahead)--June 1952

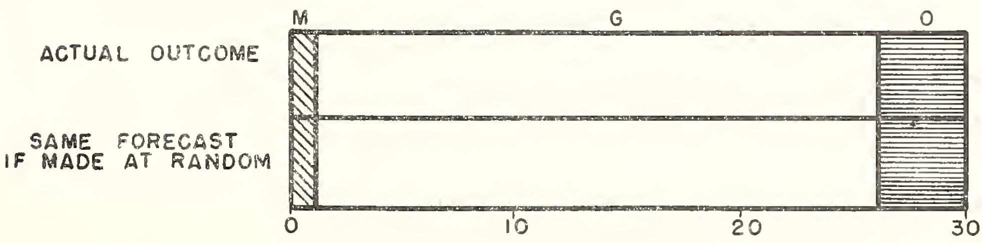


Table 72a

Coronal observations at Climax, Colorado (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 9.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	4	6	8	6	7	5	6	5	7	3	3	3	3	-	-	-	-	-	-	-	-	-
11.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	4	3	3	3	3	3	4	4	4	-	-	-	-	-	-	-	-	-	-	-	-
12.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	6	3	3	3	-	-	-	-	-	-	-	-	-	-
13.6a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	4	4	3	3	3	4	4	4	5	4	3	3	3	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	-	-	3	3	6	9	8	5	5	6	5	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6a	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	4	5	4	4	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
16.6a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	4	4	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	4	9	8	6	5	4	3	3	3	3	3	3	-	-	-	-	-	-	-
20.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	4	5	6	3	-	-	-	-	-	-	-	-	-	-	-	-
21.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	4	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-
22.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-
23.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-
24.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	5	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	6	10	13	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: Erratum for June 10, 1952: east limb observation low weight.

Table 73a

Coronal observations at Climax, Colorado (6374A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 9.6a	-	-	-	-	-	-	-	-	-	2	3	3	3	3	3	3	5	8	6	5	5	6	4	4	5	3	3	3	4	3	3	3	-	-	-	-	-
11.6a	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	3	4	3	3	4	4	5	3	3	3	3	3	3	3	3	-	-	-
12.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	3	3	3	3	3	4	3	3	3	3	2	2	2	-	-	-	-	-
13.6a	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	5	6	4	4	3	3	4	5	5	5	4	4	4	3	3	4	3	3	3	-	-	-
14.6	-	-	-	2	2	2	2	2	2	2	2	2	2	3	3	10	2	3	2	2	3	4	3	3	3	4	3	3	3	2	2	2	2	2	-	-	-
15.6a	-	2	2	2	2	2	2	2	2	2	2	3	4	3	3	3	2	2	2	2	3	4	3	2	2	2	2	2	2	2	-	-	-	-	-	-	-
16.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
17.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
18.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	6	5	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-
20.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	4	4	4	4	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	2	2	2	8	6	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
22.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.6a	-	-	-	-	-	-	-	2	2	2	3	4	4	5	5	4	4	4	4	4	3	3	3	4	4	4	3	3	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	2	2	2	2	2	3	5	5	6	8	4	3	8	15	3	3	3	3	5	3	3	-	-	-	-	-	-	-	-	-

Table 74a

Coronal observations at Climax, Colorado (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 9.6a	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	3	3	3	3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
11.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
12.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.9a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
20.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.6a	-	-	-	-	-	2	2	2	3	3	3	-	-	-	-	-	-	-	-	-	2	2	2	2	2	3	3	3	2	2	2	2	-	-	-	-	-
22.6a	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 72b

Coronal observations at Climax, Colorado (5303A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	50	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 9.6	-	-	-	-	-	-	-	-	3	3	3	3	4	4	4	4	8	6	6	6	4	4	4	4	4	4	4	4	4	4	3	3	3	-	-	-	-
11.6a	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
12.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	4	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	6	4	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	4	5	4	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-
15.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
16.6a	-	-	-	-	-	-	-	-	-	-	-	-	3	4	4	4	4	4	4	3	4	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.9a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	6	13	12	8	8	6	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-
18.6a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	6	8	8	8	6	4	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	3	3	5	6	6	10	13	9	6	6	6	6	6	3	3	-	-	-	-	-	-	-	-	-	-	-	-
20.6a	-	-	-	-	-	-	-	-	-	-	-	4	4	4	4	9	12	9	10	6	5	5	6	5	3	-	-	-	-	-	-	-	-	-	-	-	-
21.6a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	5	8	9	10	15	10	9	12	12	6	3	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	6	15	9	6	4	4	3	3	3	-	-	-	-	-	-	-	-	-	-
23.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	4	4	4	4	3	3	3	-	-	-	-	-	-	-	-	-	-	-
24.6a	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	2	3	3	4	5	6	4	3	-	-	-	-	-	-	-	-	-	-	-	-
26.7a	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	3	4	4	3	.3	3	3	5	3	3	3	3	3	3	4	3	4	3	-	-	-	-

Table 73b

Coronal observations at Climax, Colorado (6374A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 9.6	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	5	12	6	5	2	2	3	5	6	8	6	5	3	2	-	-	-	-	-	-	-	-
11.6a	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
12.6a	-	-	-	-	-	-	-	-	2	2	3	5	4	4	4	3	3	3	2	2	5	2	5	6	3	4	3	3	3	-	-	-	-	-	-	-	-
13.6	-	-	-	2	3	3	2	2	2	2	4	4	5	5	4	3	3	12	3	3	3	3	3	4	4	3	3	3	3	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	2	2	2	2	2	3	6	4	3	3	3	8	3	3	3	4	3	3	4	4	3	2	2	-	-	-	-	-	-	-	-
15.6a	-	-	-	-	-	-	-	-	2	3	3	4	4	4	3	3	3	3	6	4	3	5	12	9	4	3	3	3	3	2	2	2	2	-	-	-	-
16.6a	2	2	2	2	2	2	2	2	2	3	3	4	4	3	2	2	2	3	3	3	3	3	5	3	3	3	3	3	-	-	-	-	-	-	-	-	-
17.9a	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	3	5	5	4	3	-	-	-	-	-	-	-	-	-	-
18.6a	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	6	4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	·6	17	6	4	3	3	3	4	3	3	3	3	3	3	-	-	-	-	-	-	-	-
20.6a	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	5	6	5	5	3	4	6	6	3	3	-	-	-	-	-	-	-	-	-	-	-	-
21.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	5	5	5	8	12	2	4	5	2	2	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	3	5	4	3	3	5	3	3	3	-	-	-	-	-	-	-	-	-	-	-
23.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
24.6a	-	-	-	-	-	-	-	-	-	3	3	5	4	4	4	3	3	3	2	3	3	4	3	3	4	4	3	2	-	-	-	-	-	-	-	-	-
26.7a	-	2	2	2	2	2	2	2	3	3	2	3	3	4	6	3	2	·2	3	3	4	6	3	2	3	3	2	-	-	-	-	-	-	-	-	-	-

Table 74b

Coronal observations at Climax, Colorado (6702A), west limb

Date	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11.6a	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
12.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.6a	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.9a	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-
18.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-
20.6a	-	-	-	-	-	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.6	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.6a	-	-	-	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.6a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7a	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 75a

Coronal observations at Sacramento Peak, New Mexico (5303A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 1.7a	2	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	3	4	5	5	4	3	3	3	3	3	3	3	4	4	2	2	2
2.8a	2	2	3	2	2	2	-	-	-	-	2	2	3	3	4	5	5	3	3	3	3	5	5	5	4	2	2	3	3	3	3	4	4	4	3	3	3
4.7a	4	5	5	4	4	4	4	3	3	3	4	4	4	4	5	5	5	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.8	3	2	2	2	2	2	2	2	2	3	3	3	3	3	4	9	11	8	8	14	15	11	8	8	8	7	3	3	3	2	3	4	4	2	2	2	-
13.0	X	X	X	X	3	3	2	2	5	5	5	4	3	3	5	8	12	11	9	7	8	7	6	11	16	14	11	-	-	2	-	-	-	-	-	2	2
14.6	-	-	-	2	3	2	3	4	5	5	3	3	3	3	5	14	19	15	16	16	15	11	5	5	4	3	3	2	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	2	3	5	6	7	7	6	10	11	14	20	23	22	21	19	17	16	14	11	5	6	4	3	3	2	2	2	-	-	-	-	-
17.7	3	3	3	4	4	3	3	7	11	8	6	6	7	8	8	11	13	14	14	14	13	10	8	9	5	5	5	5	4	4	3	3	3	3	2	2	2
18.7a	2	3	4	5	5	4	4	4	3	3	3	4	4	5	5	5	5	6	6	8	11	10	8	5	5	4	4	3	3	3	4	4	4	5	4	4	4
20.7	2	2	2	3	3	3	3	3	4	3	4	5	4	4	4	9	5	4	4	10	11	14	15	16	14	12	10	4	3	3	3	2	2	3	3	3	3
23.8	2	-	-	-	2	2	2	3	4	4	4	3	3	3	3	4	4	5	5	4	10	12	13	10	6	5	4	4	3	3	3	4	3	2	2	2	2
24.7	-	-	-	-	2	2	2	2	3	3	3	3	2	2	3	3	3	4	8	7	13	14	14	8	4	4	3	3	2	2	2	2	2	2	2	2	2
25.7	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	4	3	4	5	9	12	12	11	8	3	3	3	2	2	3	3	3	3	3	2	2	2
26.7	5	4	4	3	3	3	3	3	3	3	3	4	3	3	2	2	2	4	4	11	13	14	5	4	4	3	3	3	3	3	2	3	2	2	2	2	2
27.7	3	3	5	5	3	3	3	3	2	2	2	3	3	3	3	3	3	3	3	4	16	20	16	3	2	2	3	4	4	4	3	3	2	2	2	2	2
30.7a	3	3	3	3	3	3	3	3	4	4	5	5	5	5	5	5	5	6	9	8	7	6	5	4	4	3	3	2	4	4	3	4	3	3	2	3	3
31.7a	5	5	5	5	4	4	4	4	4	5	6	5	6	7	5	5	5	7	11	8	7	6	5	6	5	5	5	5	5	5	5	6	4	3	3	3	3

Table 76a

Coronal observations at Sacramento Peak, New Mexico (6374A), east limb

te	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
CT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
52																																					
l 1.7a	3	2	2	2	2	4	4	3	3	2	2	2	3	5	7	5	10	3	4	4	4	4	3	4	3	5	4	3	2	2	3	3	2	2	2	3	2
2.8a	3	3	2	3	3	2	2	2	2	2	2	2	5	5	5	6	5	4	5	5	4	3	2	3	2	3	3	4	3	2	3	3	4	4	2	3	3
4.7a	3	3	3	3	2	2	3	2	2	3	3	6	7	8	7	7	6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.3	4	5	4	3	4	3	3	2	2	2	4	7	11	12	10	8	9	10	11	6	5	4	8	8	5	6	5	7	8	3	4	3	3	3	3	3	3
13.0	X	4	5	4	4	4	3	2	2	2	2	3	4	5	4	13	14	11	6	7	5	5	4	12	11	5	6	5	6	6	6	2	3	2	2	2	2
14.6	3	3	3	5	4	3	2	-	-	2	2	3	4	5	11	14	10	10	2	2	5	2	2	4	7	6	6	5	3	3	2	3	3	3	3	3	3
16.7	4	4	3	3	3	3	4	2	2	2	5	4	5	6	5	3	4	3	3	4	3	4	3	4	3	3	4	5	4	3	3	3	5	3	4	4	4
17.7	3	3	2	3	4	4	3	2	2	2	2	3	2	3	3	2	3	3	2	3	5	3	2	3	3	2	2	3	5	4	3	3	2	3	2	3	2
18.7a	3	3	3	3	2	3	2	2	3	2	2	3	3	3	3	2	2	2	3	3	4	4	3	2	2	3	3	3	3	3	3	3	2	2	2	3	3
20.7	2	3	3	3	3	2	2	2	2	2	2	2	2	2	4	5	4	6	4	5	12	5	4	3	3	2	2	2	2	3	2	2	3	3	2	2	2
23.8	3	3	4	3	2	2	-	2	3	2	2	4	5	8	9	10	11	11	10	8	7	6	5	5	5	3	3	3	2	2	2	3	3	3	3	2	2
24.7	4	3	5	4	3	2	2	2	3	3	4	4	10	11	12	11	12	11	8	7	8	4	3	5	8	6	5	3	2	2	2	3	3	3	3	2	4
25.7	3	3	3	3	2	3	2	2	2	3	3	3	3	5	8	10	7	4	3	3	14	8	3	3	5	7	3	3	3	2	3	2	2	2	3	3	3
26.7	2	-	3	3	3	2	3	2	3.	3	4	4	4	4	8	10	10	8	5	6	8	14	3	2	3	5	6	2	2	2	2	2	2	2	2	2	2
27.7	2	2	2	3	2	2	3	2	2	3	3	3	3	4	3	4	10	12	7	8	11	14	5	3	3	5	6	4	3	2	3	2	2	2	2	2	2
30.7a	3	3	3	2	3	2	2	2	3	3	3	3	8	10	4	4	3	5	10	8	8	6	3	2	3	5	5	5	4	3	4	4	3	4	3	3	4
31.7a	4	4	5	4	4	3	3	3	3	4	3	3	4	5	4	5	5	4	4	4	6	5	5	4	4	5	5	6	5	4	3	4	3	3	3	3	3

Table 77a

Coronal observations at Sacramento Peak, New Mexico (6702A), east limb

Date	Degrees north of the solar equator																		0°	Degrees south of the solar equator																	
GCT	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 1.7a	-	-	-	-	-	-	-	-	-	2	2	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6.8	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	2	2	2	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
13.0	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14.6	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	3	3	2	2	2	2	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	2	2	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7a	-	-	-	-	-	-	-	-	-	-	-	-	3	2	3	3	2	2	2	2	2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7	-	-	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
27.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	4	4	2	2	-	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	2	-	X	X	X	X	X	-	-	-	-	-	-	-	-	-	-

Table 75b

Coronal observations at Sacramento Peak, New Mexico (5303A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	50	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 1.7	2	2	2	-	2	2	3	3	3	3	4	4	4	4	5	5	8	8	10	12	13	14	13	10	8	5	4	3	3	3	4	3	3	3	3	2	2
2.8	3	3	3	3	4	4	3	3	3	3	2	3	3	4	5	5	8	8	8	10	11	12	14	12	8	7	5	2	3	3	3	3	3	3	2	2	2
4.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	5	5	4	5	4	5	4	4
6.8	-	-	-	2	2	3	-	-	-	3	5	5	5	4	8	16	23	28	32	30	14	11	14	16	16	10	7	5	5	5	5	5	4	3	3	3	3
13.0	2	2	2	2	2	2	3	2	2	2	2	3	3	3	5	5	6	12	10	5	4	3	3	-	-	X	X	X	X	X	X	X	X	X	X	X	X
14.6a.	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	3	3	6	7	5	4	3	3	3	3	3	3	4	4	3	2	2	2	-	-	-	-
16.7	-	-	-	-	-	-	2	2	3	5	4	3	3	4	5	5	12	12	13	11	13	13	10	5	3	3	3	4	5	3	3	-	-	-	-	-	-
17.7	2	2	-	-	2	2	2	3	4	3	3	3	4	4	4	5	10	14	13	12	11	18	8	5	-	-	2	2	4	4	3	3	3	2	2	2	3
18.7a	4	5	5	5	3	3	3	4	4	3	3	4	4	5	5	5	6	5	5	5	4	5	5	4	4	3	3	3	4	4	4	3	3	3	2	2	2
20.7	3	3	3	3	3	3	3	3	3	3	3	3	3	5	6	10	14	14	16	18	12	10	8	6	5	5	4	3	2	2	3	4	2	2	2	2	2
23.8	2	2	2	2	2	2	3	3	4	3	3	3	4	5	8	7	5	6	8	13	14	14	8	9	8	7	4	4	6	8	10	4	3	3	2	2	2
24.7	2	2	3	3	2	3	3	3	3	3	3	3	5	8	7	6	5	5	4	4	7	11	13	11	7	5	4	4	5	8	9	8	2	-	-	-	-
25.7	2	2	2	3	3	4	4	4	4	3	3	4	4	5	6	6	4	3	4	4	4	12	16	11	8	5	3	3	4	4	5	5	3	3	3	2	2
26.7a	2	2	3	3	2	3	3	3	3	3	4	5	6	7	7	8	5	4	3	4	4	3	7	6	5	4	3	3	3	4	4	3	4	4	5	5	5
27.7a	2	2	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	5	7	7	6	7	6	5	4	3	3	3	4	4	4	3	3	3	3	3
30.7a	3	4	4	3	3	3	3	2	3	4	4	3	4	4	3	3	3	3	3	3	4	7	4	4	3	2	2	2	5	5	4	4	4	4	4	3	3
31.7a	3	3	3	4	4	3	3	3	4	5	4	4	3	3	3	8	5	5	4	4	3	8	X	X	X	X	X	5	5	5	5	5	6	6	6	5	5

Table 76b

Coronal observations at Sacramento Peak, New Mexico (6374A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 1.7	2	2	2	2	2	3	2	3	3	2	3	4	4	5	3	3	3	2	2	3	2	3	11	5	5	2	2	3	3	2	2	2	2	3	3	3	3
2.8	3	2	3	4	5	5	3	2	2	2	2	2	2	3	3	2	2	2	2	2	8	12	3	2	2	2	2	2	2	3	2	2	2	2	2	3	3
4.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	3	2	2	3	3	3	3
6.8	3	3	2	2	3	3	2	2	2	3	3	2	3	4	5	8	16	16	17	14	11	13	10	8	6	3	2	2	2	2	3	3	2	3	3	3	4
13.0	2	3	2	2	3	2	2	2	2	2	3	4	5	4	4	3	3	8	3	2	3	3	3	6	X	X	X	X	X	X	X	X	X	X	X	X	X
14.6a	3	3	3	3	2	2	3	2	3	3	6	8	7	6	6	5	4	8	11	5	5	5	5	7	8	4	3	3	3	3	3	2	2	3	3	3	3
16.7	4	4	5	3	4	5	3	2	2	3	5	8	8	6	5	6	5	3	5	4	8	6	11	12	11	8	6	3	3	3	3	2	3	3	2	3	4
17.7	2	2	2	3	3	2	2	3	2	3	5	6	5	5	5	5	6	7	3	3	14	14	8	6	5	6	5	3	2	2	2	3	2	3	3	3	3
18.7a	3	3	3	3	2	3	2	3	2	2	2	2	2	3	4	8	11	4	3	3	2	3	3	3	2	3	4	2	4	4	3	3	2	2	3	2	3
20.7	2	2	2	3	3	3	2	2	2	2	2	3	3	3	4	11	12	11	10	6	8	9	8	5	3	4	3	2	2	2	2	2	2	2	2	2	2
23.8	2	3	3	3	3	3	3	2	2	2	3	6	7	8	8	5	7	10	11	6	7	7	11	7	5	3	4	2	2	3	2	2	3	2	2	3	3
24.7	4	4	3	3	3	3	3	2	2	3	5	7	8	8	6	5	4	3	4	3	4	6	8	4	2	4	5	3	2	2	2	2	3	3	4	4	4
25.7	3	2	2	3	3	2	2	2	2	2	3	3	6	5	6	5	3	3	3	2	11	12	10	3	3	3	4	4	3	2	2	2	3	3	2	3	3
26.7a	2	3	2	2	2	2	2	2	2	3	3	4	4	4	4	7	4	3	4	3	5	6	7	3	4	3	3	2	2	2	2	2	2	2	2	2	2
27.7a	2	2	3	3	3	2	3	3	2	2	2	2	4	5	4	3	2	2	2	2	3	4	3	2	3	2	3	2	2	2	2	2	3	2	2	2	2
30.7a	4	3	4	3	2	2	2	2	2	3	4	4	4	5	5	4	4	3	4	3	4	4	2	3	3	2	3	3	4	4	3	2	3	3	3	3	3
31.7a	3	3	3	3	3	3	2	2	2	2	2	2	3	3	3	2	2	3	2	2	2	2	X	X	X	X	X	4	4	4	5	5	4	4	5	5	4

Table 77b

Coronal observations at Sacramento Peak, New Mexico (6702A), west limb

Date GCT	Degrees south of the solar equator																		0°	Degrees north of the solar equator																	
	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20	15	10	5		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
1952																																					
Jul 1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.7a	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	-	-
6.8	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	3	3	3	3	2	2	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
13.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X
14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.7	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	2	2	2	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	3	3	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	2	3	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
25.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.7a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.7a	-	-	-	-	-	-	-	-	-	-	2	2	2	2	3	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 78

Zürich Provisional Relative Sunspot Numbers

July 1952

Date	R_Z*	Date	R_Z*
1	59	17	53
2	55	18	43
3	39	19	23
4	31	20	30
5	26	21	25
6	12	22	9
7	13	23	9
8	19	24	9
9	44	25	17
10	52	26	11
11	70	27	19
12	66	28	23
13	72	29	26
14	93	30	36
15	90	31	60
16	85	Mean:	39.3

*Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

Table 79

American Relative Sunspot Numbers

June 1952

Date	R_A, *	Date	R_A, *
1	19	17	52
2	18	18	60
3	7	19	62
4	2	20	62
5	1	21	60
6	5	22	67
7	23	23	67
8	10	24	52
9	11	25	44
10	13	26	47
11	15	27	52
12	18	28	52
13	19	29	60
14	27	30	66
15	46		
16	41	Mean:	35.9

*Combination of reports from 28 observers; see page 10.

Table 80

Solar Flares, June 1952

Observatory	Date	Time Observed		Duration	Area (Mill) (of) (Visible) (Hemisph)	Position		Time of Maximum (GCT)	Int. of Maximum	Relative Area of Maximum (Tenths)	Importance	SID Observed
	1952	Beginning (GCT)	Ending (GCT)	(Min)		Latitude (Deg)	Longitude Diff (Deg)					
cMath	June 23	1515				N17	E42	-			1	
"	23	2000				N17	E42	-			-	
"	26	1220				S10	E35	-			2 +	
"	27	1220				S05	E18	-			1 -	
oulder	28	1715	-	-	100	S06	E08	1720	10		1	
"	28	2300	-	-	100	S08	E05	2310	15		1	

B Flare started before given time
A Flare ended after given time
Q Time reported as questionable

Table 81

Indices of Geomagnetic Activity for June 1952

Preliminary values of international character-figures, C;
Geomagnetic planetary three-hour-range indices, Kp;
Magnetically selected quiet and disturbed days

Gr. Day 1952	C	Values Kp three-hour interval 1	2	3	4	5	6	7	8	Sum	Final Selected Days
1	0.5	2o	3+	3o	3-	2-	2o	2+	2o	19o	Five
2	0.4	2o	3-	2o	1+	2o	2o	3o	2-	17-	Quiet
3	0.6	2+	3-	2-	2-	2-	2-	3o	3o	18-	
4	0.4	3o	1+	1o	2o	1+	1o	2-	1+	13-	6
5	0.6	2o	3-	2o	2o	2o	3o	2o	2-	17+	7
											13
6	0.2	3-	1+	2o	1+	1o	1-	1o	1o	11o	20
7	0.1	1+	1o	1o	2-	1o	1-	2o	1+	10o	21
8	1.2	3o	3+	3+	4+	3+	4+	4+	4+	30+	
9	1.2	3+	4+	4-	3+	6-	5o	4-	4+	33+	
10	1.0	4-	3o	3-	3-	4o	4-	3+	4+	27+	
11	0.8	3+	3o	4o	2+	3o	4-	3o	3+	26-	Five
12	0.4	3o	2+	3-	2-	2o	2o	2-	2-	17o	Disturbed
13	0.3	0+	1o	2+	0+	1o	1o	2+	2+	11-	
14	1.3	2-	3-	5-	4o	5-	4+	5+	5o	32+	9
15	0.9	3-	4+	4-	4o	4o	3-	3o	3o	27+	14
											23
16	0.9	3o	5-	4+	3+	4-	4+	3o	2-	28o	24
17	0.8	3-	3+	3+	4-	3-	4-	2+	2-	23+	30
18	0.8	4+	3+	2-	3-	3o	2o	2o	3+	22+	
19	0.3	2o	1+	1+	1+	3-	2o	2-	1+	14-	
20	0.1	2o	1+	1o	1+	2-	1+	1+	1+	11+	
21	0.2	1+	1o	0+	2-	2-	2-	1+	1+	10+	Ten
22	1.1	1o	1+	3+	3-	5o	5-	5-	4+	27o	Quiet
23	1.3	4+	4-	5-	5-	5o	4-	3+	4+	34-	
24	1.2	5+	6-	4-	4o	5o	5-	3+	4-	35+	2
25	0.9	2-	2-	2o	3-	4-	3+	4-	4+	23o	4
											6
26	1.0	4+	3o	3o	4o	4-	4o	2+	2-	26o	7
27	0.8	3-	3+	3o	2+	3-	3+	3+	3o	24-	12
28	0.4	3-	1o	1+	3+	3o	2-	1o	1o	15o	13
29	0.9	2-	1+	2+	2-	1+	1o	4o	6o	19+	19
30	1.7	5+	8o	8-	7o	4-	2+	2-	2+	38o	20
											21
Mean	0.74										30

Table 82

Sudden Ionosphere Disturbances Observed at Washington, D. C.

July 1952

1952 Day	GCT Beginning	GCT End	Location of transmitters	Relative intensity at minimum*	Othe Other phenomena
July					
2	2107	2210	D. C., North Dakota	----	
5	1904	2130	Ohio, D. C., Mexico	0.01	Terr.mag.pulse** 1850-1925
10	1530	1545	Ohio, D. C., Mexico, North Dakota	0.1	
12	1454	1525	Ohio, D. C., Colombia, England, Mexico, North Dakota	0.03	Terr.mag. pulse** 1448-1455 Solar flare*** 1450 Solar flare**** 1505
16	1448	1505	Ohio, D. C., Mexico	0.1	Solar flare*** 1440
16	1807	1850	Ohio, D. C., Colombia, England, Mexico, North Dakota	0.02	Terr.mag.pulse** 1809-1815 Solar flare*** 1805
28	1635	1645	Ohio, D. C., Colombia, England, Mexico, North Dakota	0.1	Solar flare**** 1635
31	1353	1415	Ohio, D. C., Colombia, England, Mexico	0.1	Solar flare*** 1350

*Ratio of received field intensity during SID to average field intensity before and after, for station KQ2XAU (formerly W8XAL), 6080 kilocycles, 600 kilometers distant.

**As observed on Cheltenham magnetogram of the United States Coast and Geodetic Survey.

***Time of observation at Sacramento Peak, New Mexico.

****Time of observation at McMath-Hulbert Observatory, Pontiac, Michigan.

----Insufficient data.

Table 83

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief,

Cable and Wireless, Ltd., as Observed in England

1951 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
June 23	0850	0905	Brentwood	Belgian Congo, Bulgaria, Eritrea, Greece, Palestine, Portugal, Southern Rhodesia, Spain, Syria, Thailand, Trans-Jordan, Turkey, Yugoslavia.
23	0845	0900	Somerton	Canada, Ceylon, India, Iran, Iraq, New York
25	1000	1030	Brentwood	Afghanistan, Austria, Belgian Congo, Greece, India, Kenya, Spain, Thailand

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

GRAPHS OF IONOSPHERIC DATA

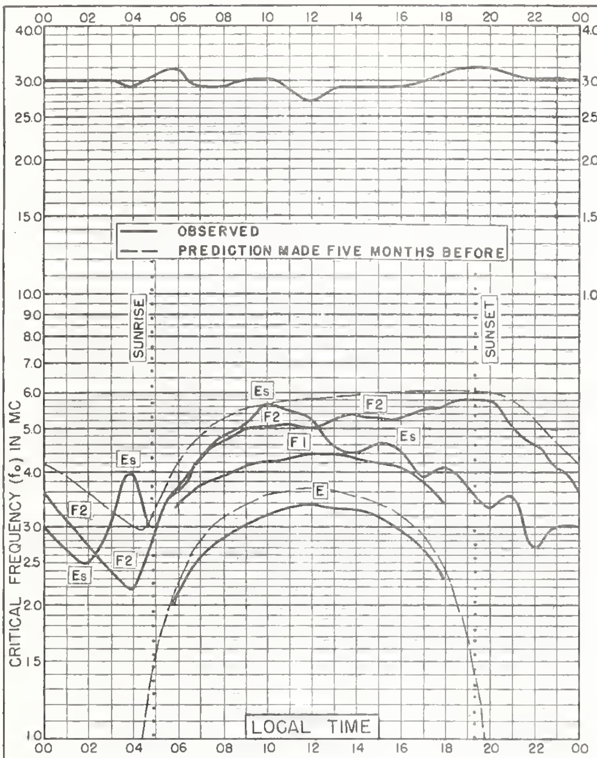


Fig. 1. WASHINGTON, D.C.
38.7°N, 77.1°W JULY 1952

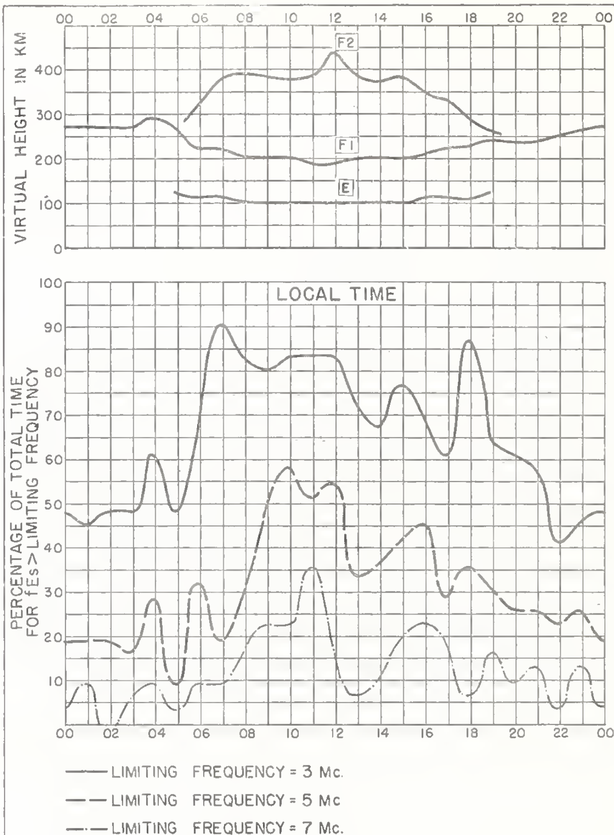


Fig. 2. WASHINGTON, D.C. JULY 1952

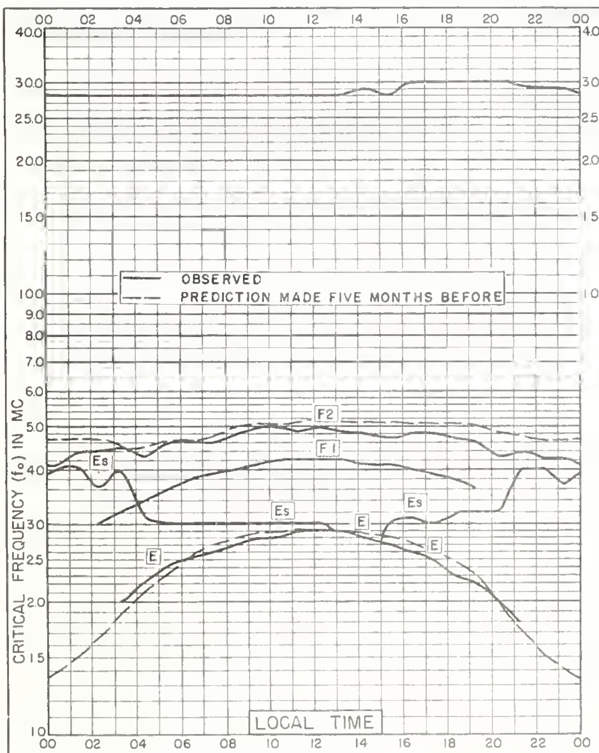


Fig. 3. TROMSO, NORWAY
69.7°N, 19.0°E JUNE 1952

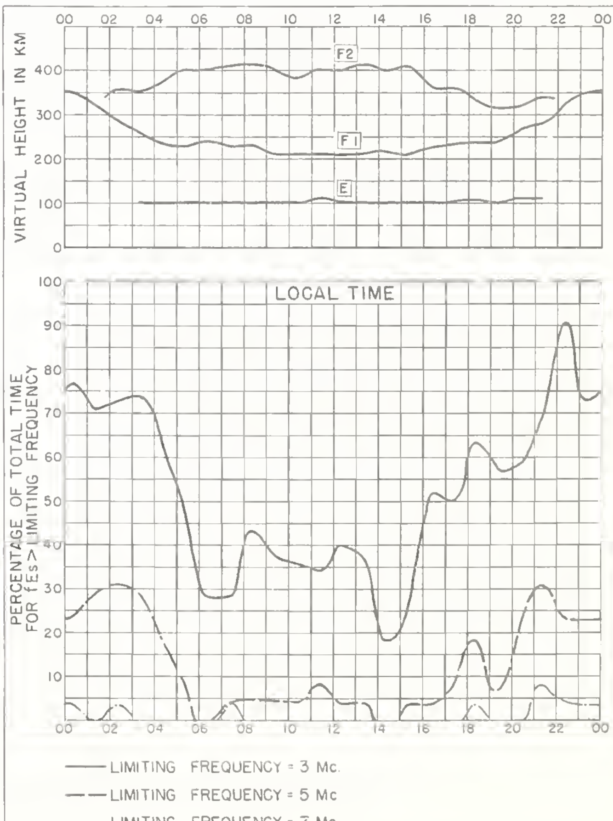


Fig 4. TROMSO, NORWAY JUNE 1952

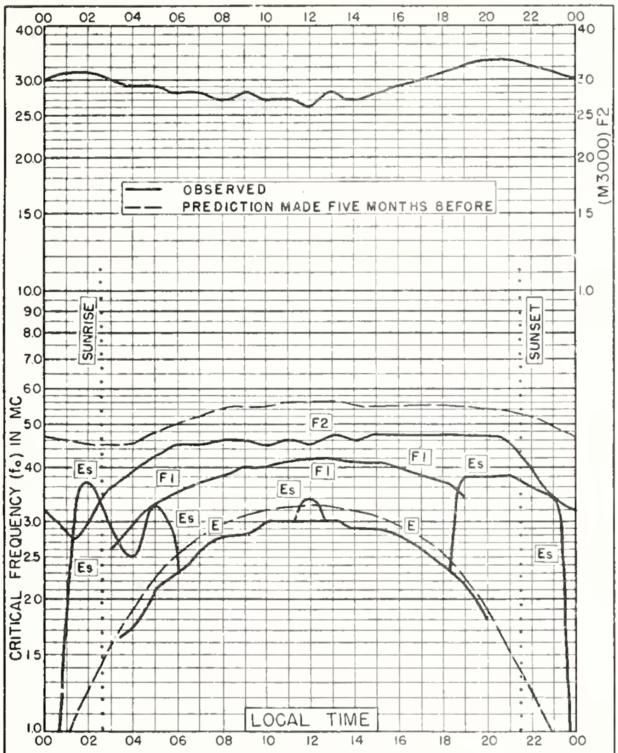


Fig. 5. ANCHORAGE, ALASKA
61.2°N, 149.9°W JUNE 1952

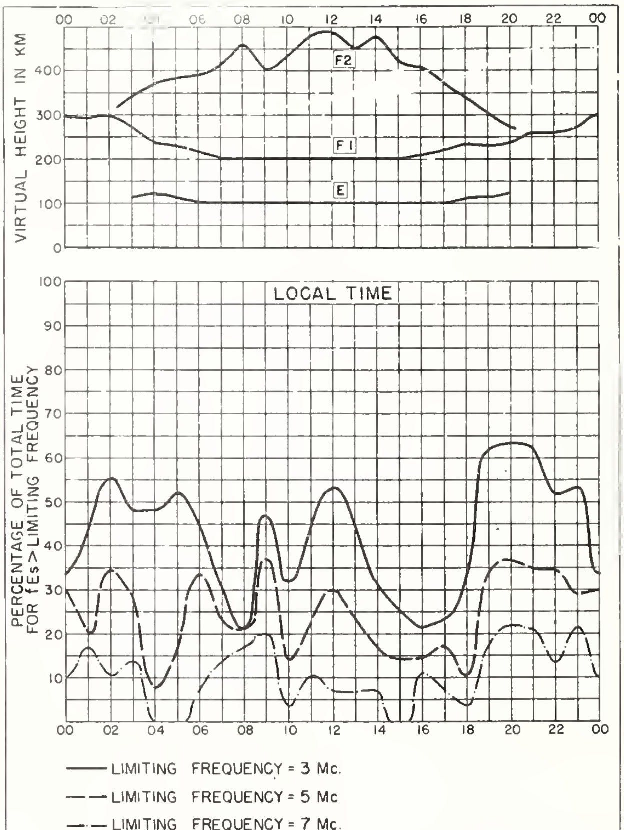


Fig. 6. ANCHORAGE, ALASKA JUNE 1952

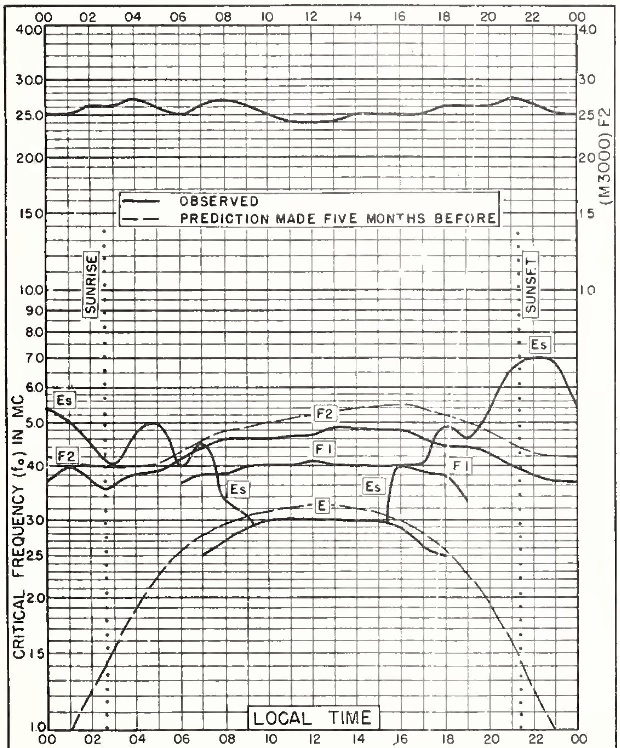


Fig. 7. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W JUNE 1952

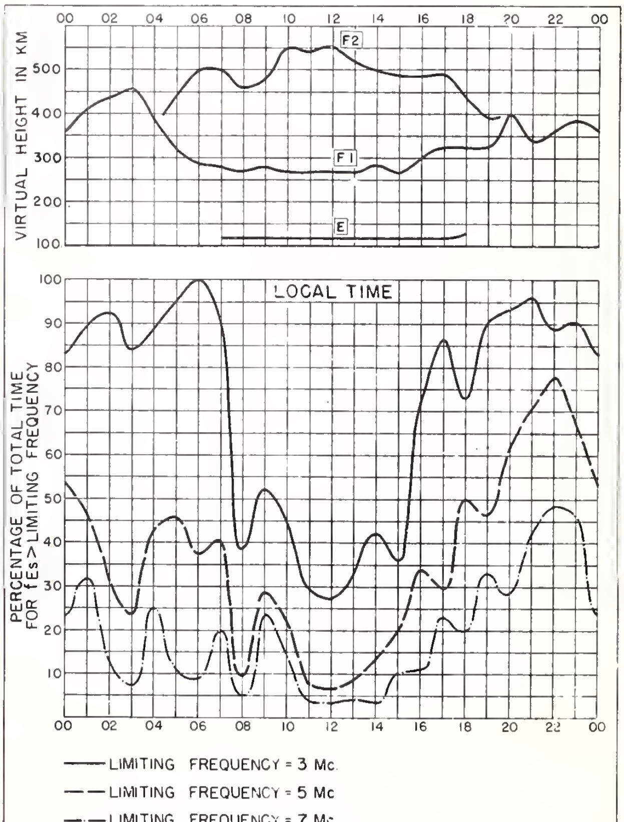


Fig. 8. NARSARSSUAK, GREENLAND JUNE 1952

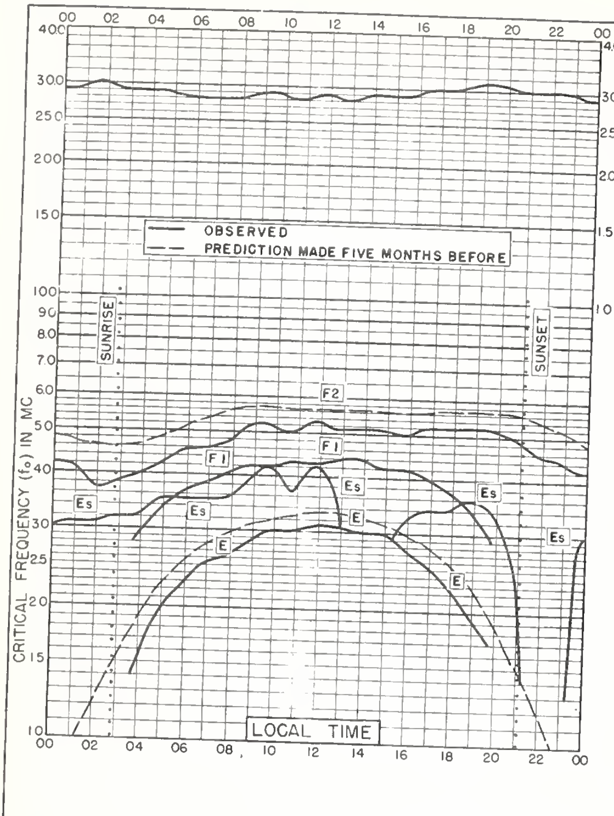


Fig. 9. OSLO, NORWAY
60.0°N, 11.1°E
JUNE 1952

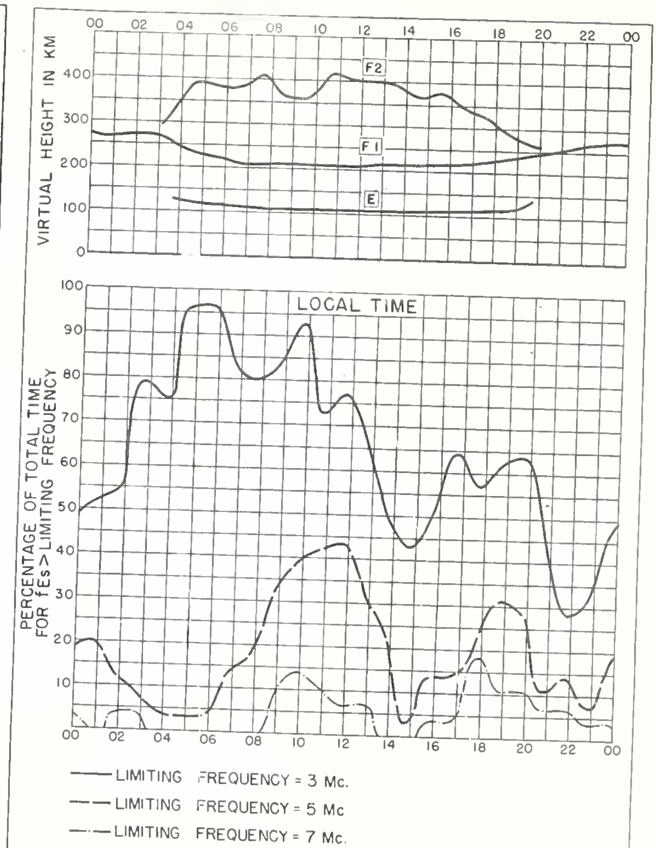


Fig. 10. OSLO, NORWAY
JUNE 1952

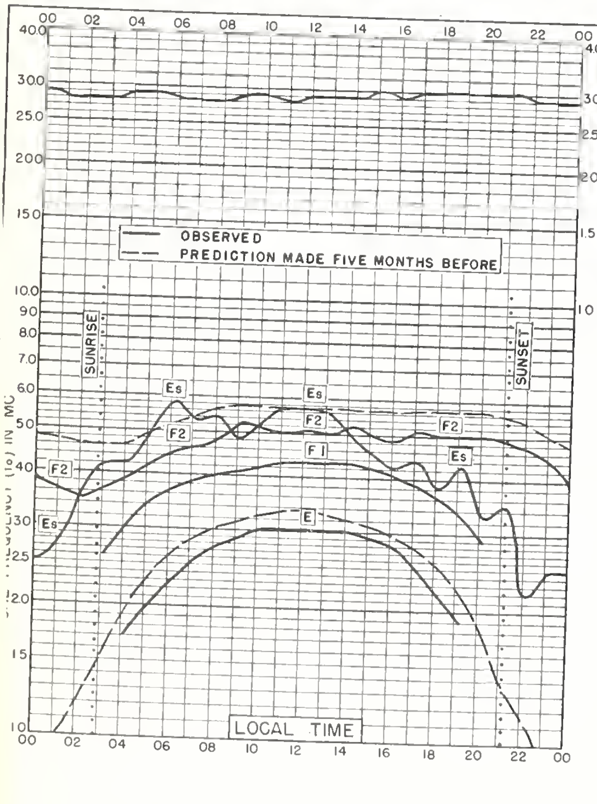


Fig. 11. UPSALA, SWEDEN
59.8°N, 17.6°E
JUNE 1952

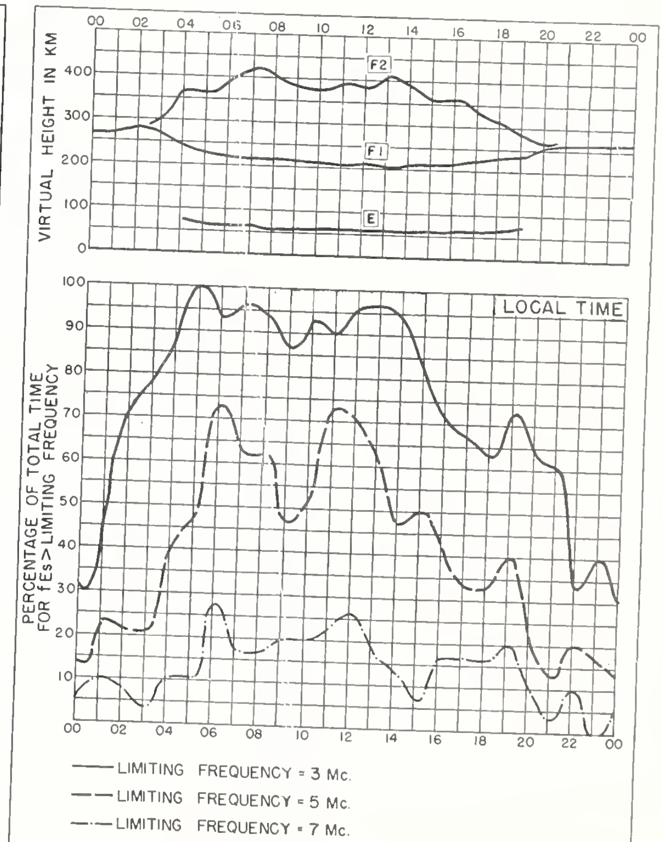


Fig. 12. UPSALA, SWEDEN
JUNE 1952

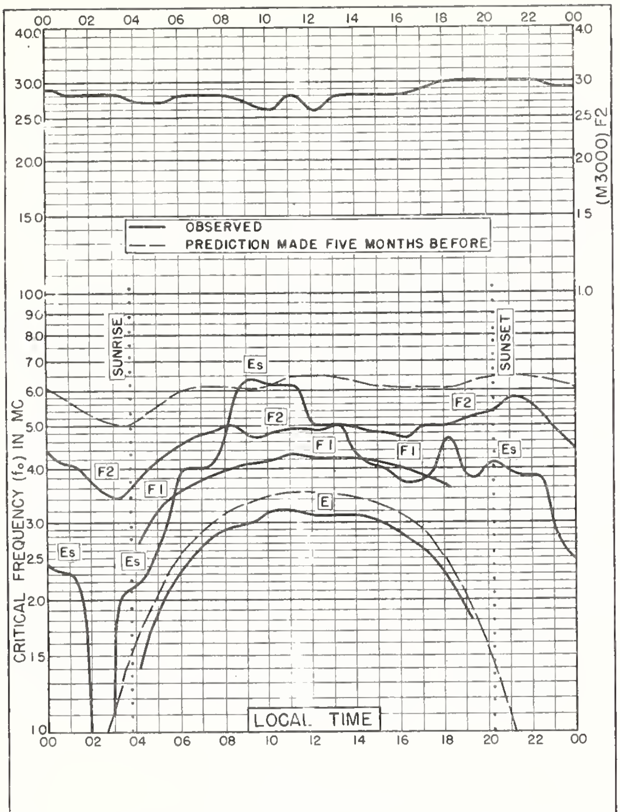


Fig. 13. ADAK, ALASKA
51.9°N, 176.6°W JUNE 1952

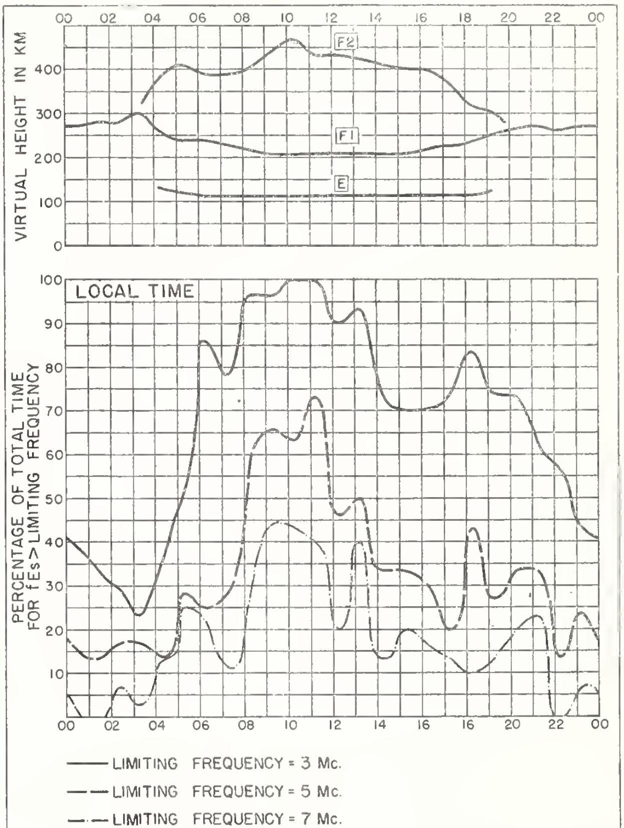


Fig. 14. ADAK, ALASKA JUNE 1952

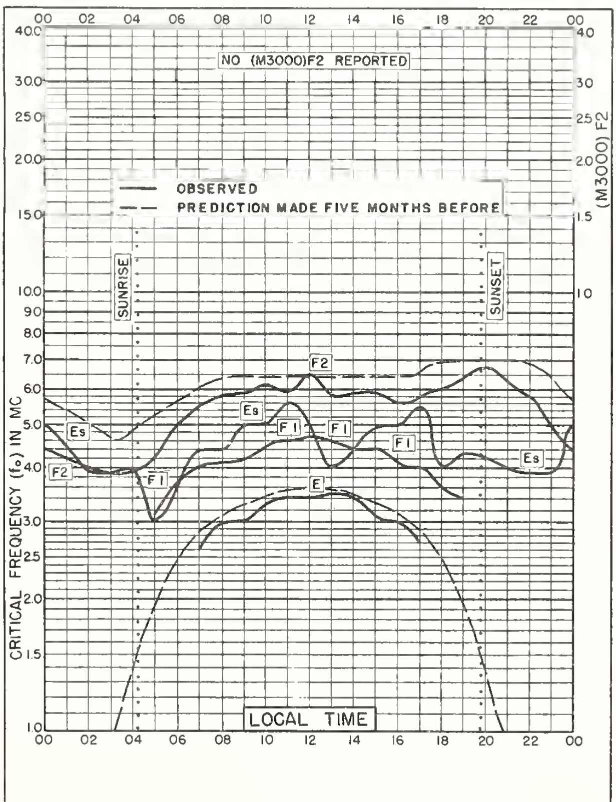


Fig. 15. GRAZ, AUSTRIA
47.1°N, 15.5°E JUNE 1952

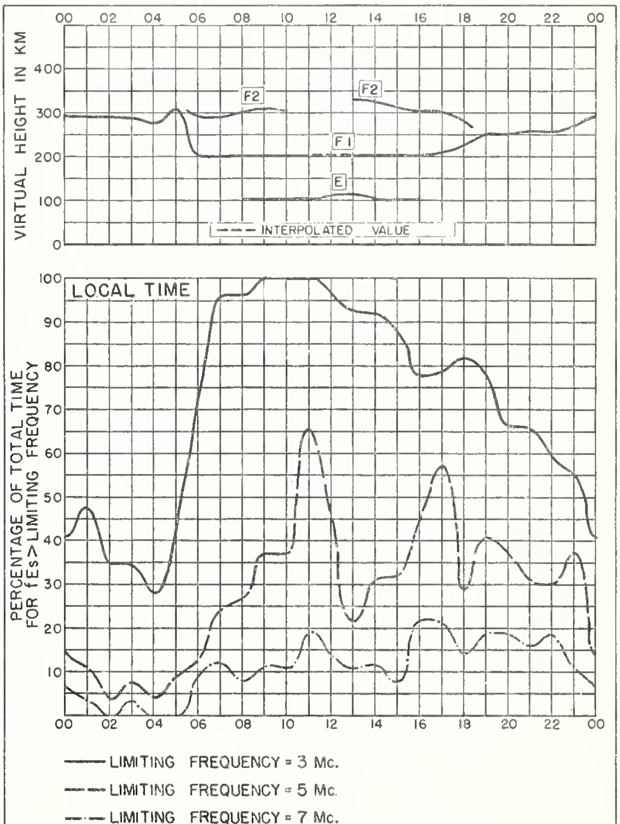


Fig. 16. GRAZ, AUSTRIA JUNE 1952

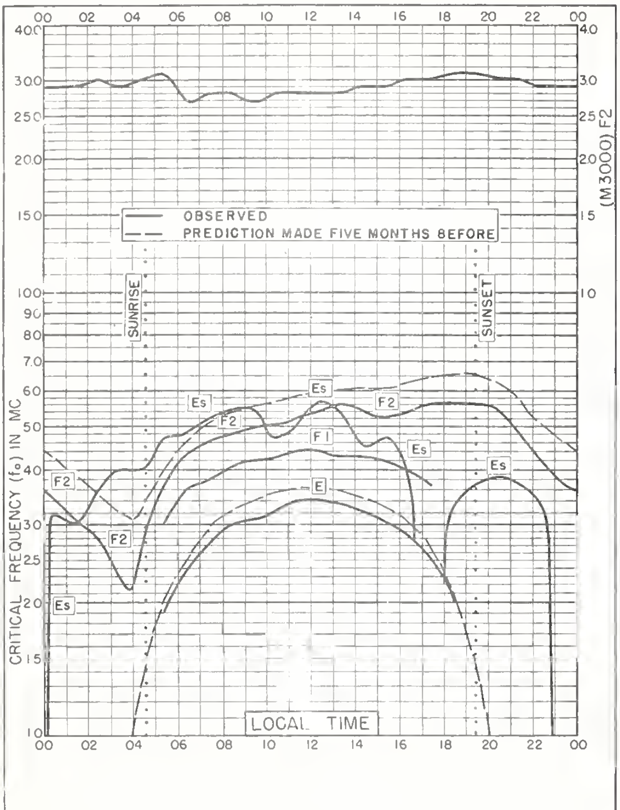


Fig. 17. BATAVIA, OHIO
39.1°N, 84.1°W JUNE 1952

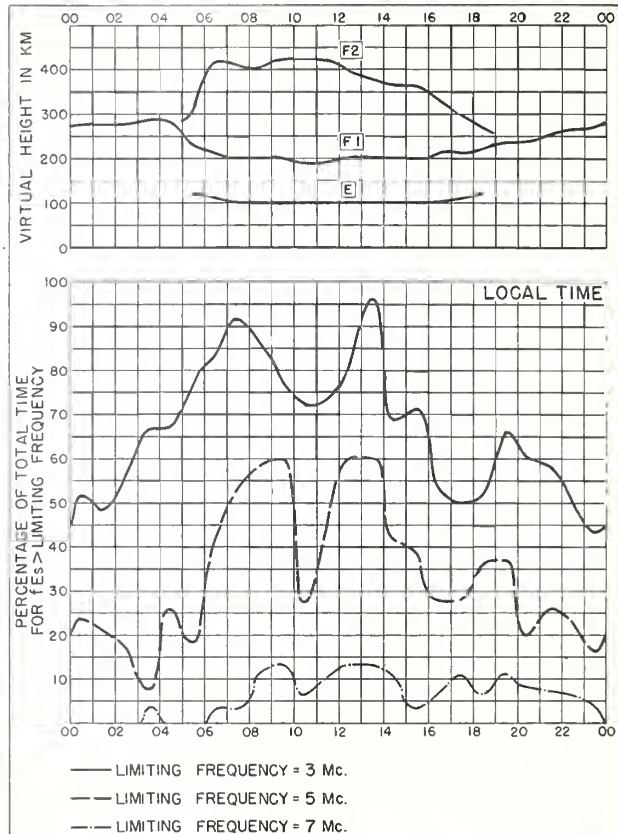


Fig. 18. BATAVIA, OHIO JUNE 1952

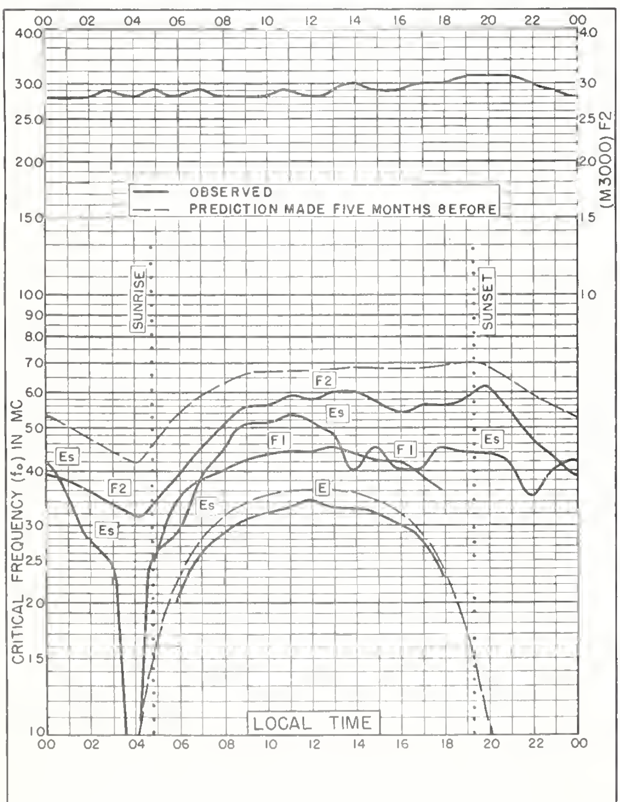


Fig. 19. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W JUNE 1952

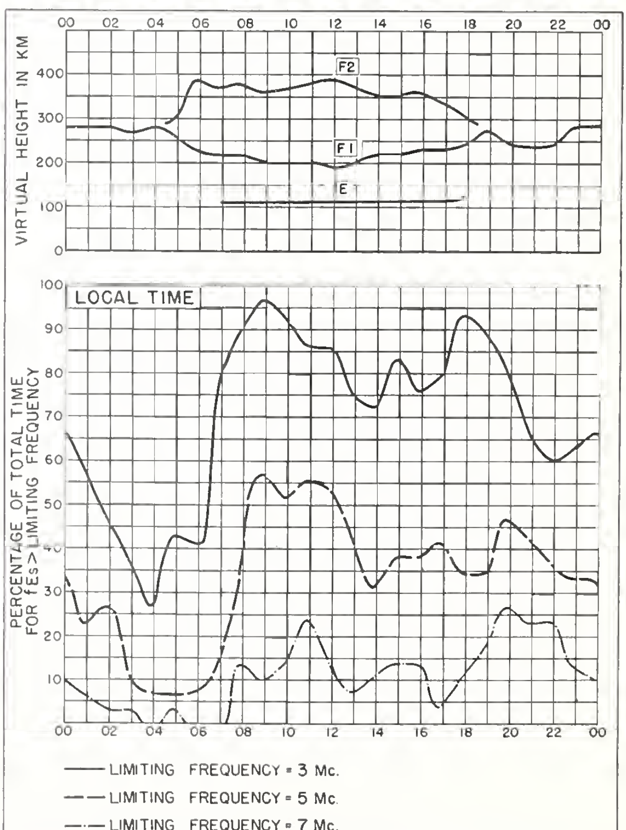


Fig. 20. SAN FRANCISCO, CALIFORNIA JUNE 1952

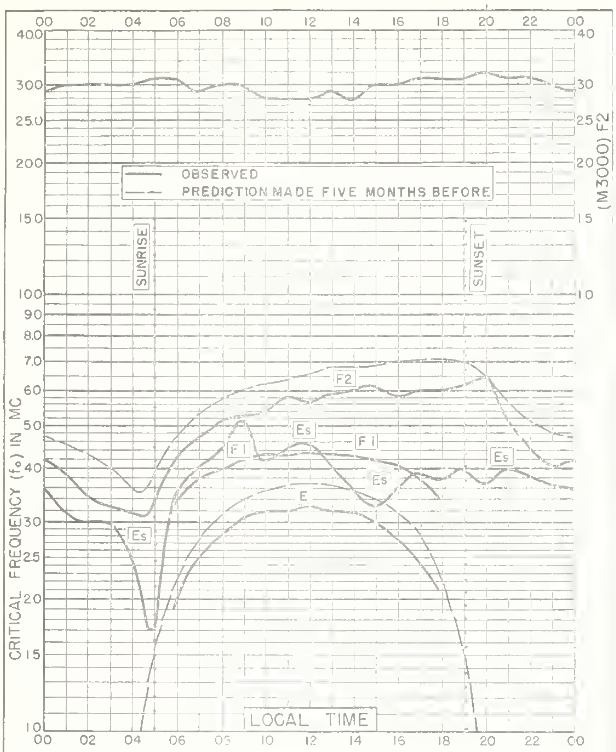


Fig. 21. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W JUNE 1952

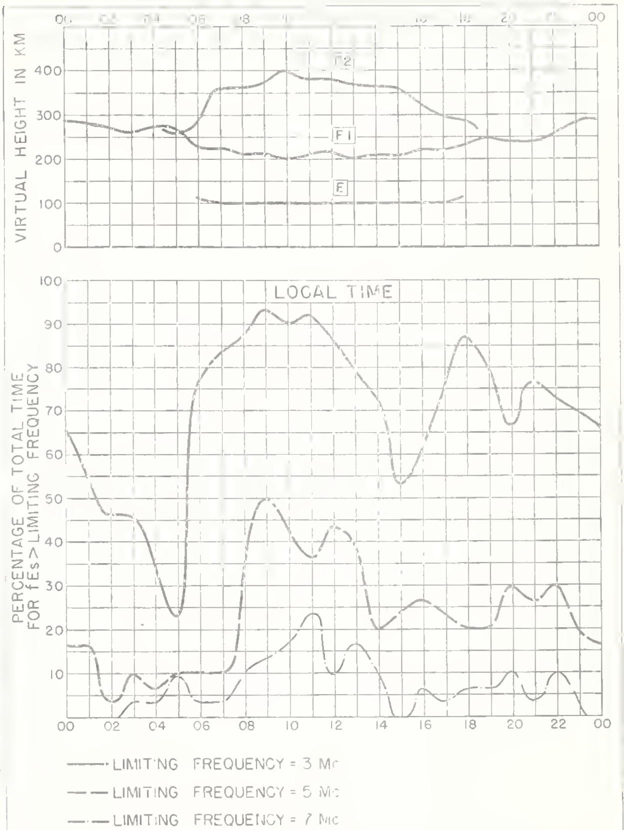


Fig. 22. WHITE SANDS, NEW MEXICO JUNE 1952

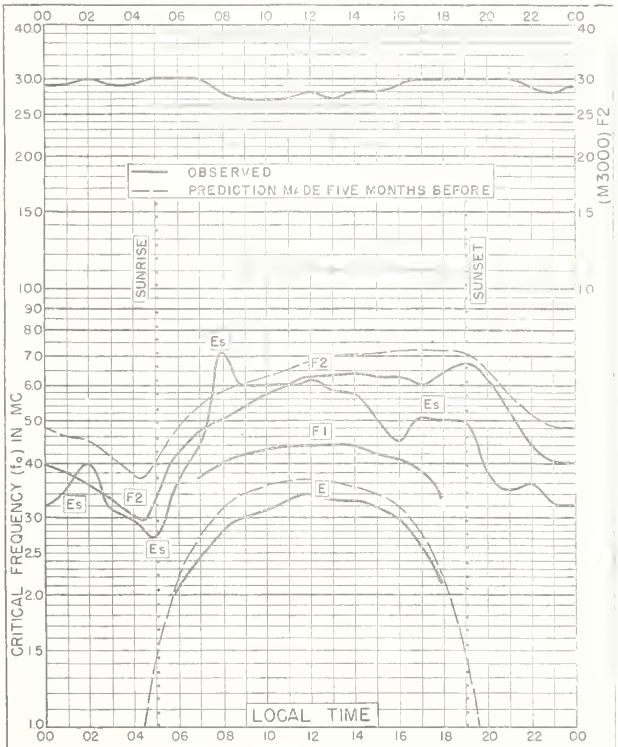


Fig. 23. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W JUNE 1952

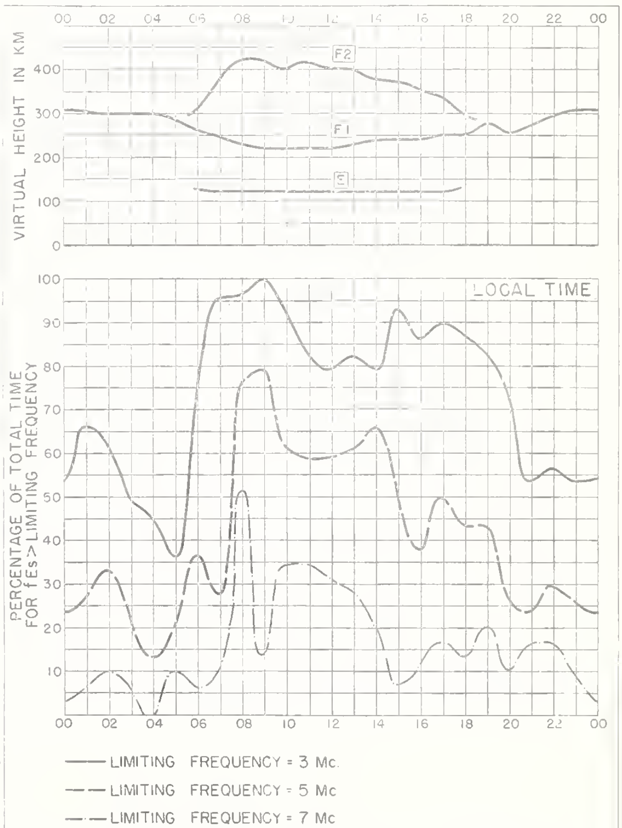


Fig. 24. BATON ROUGE, LOUISIANA JUNE 1952

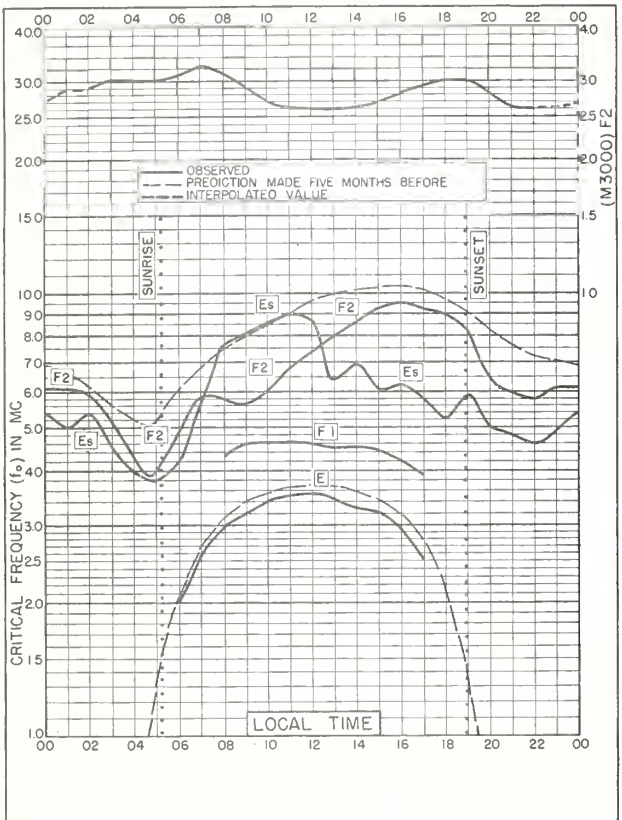


Fig. 25. OKINAWA I.
26.3°N, 127.8°E JUNE 1952

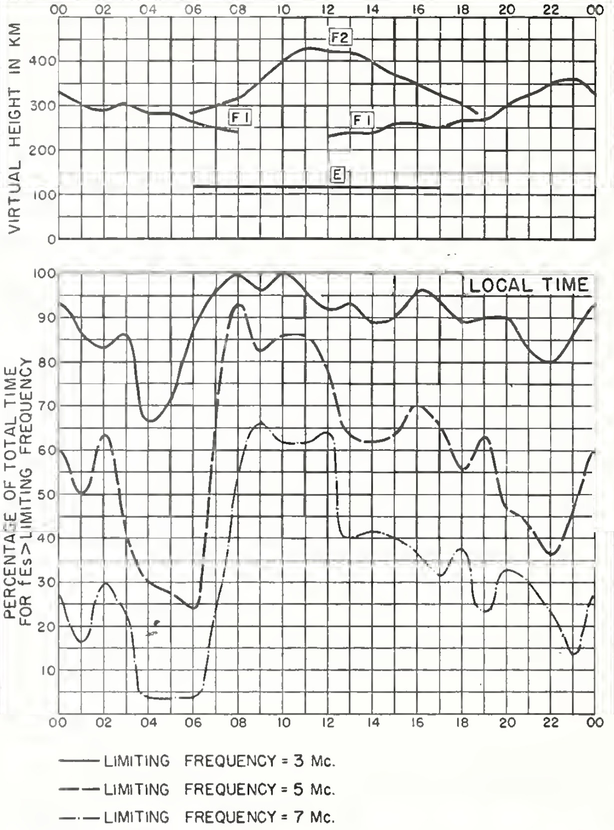


Fig. 26. OKINAWA I. JUNE 1952

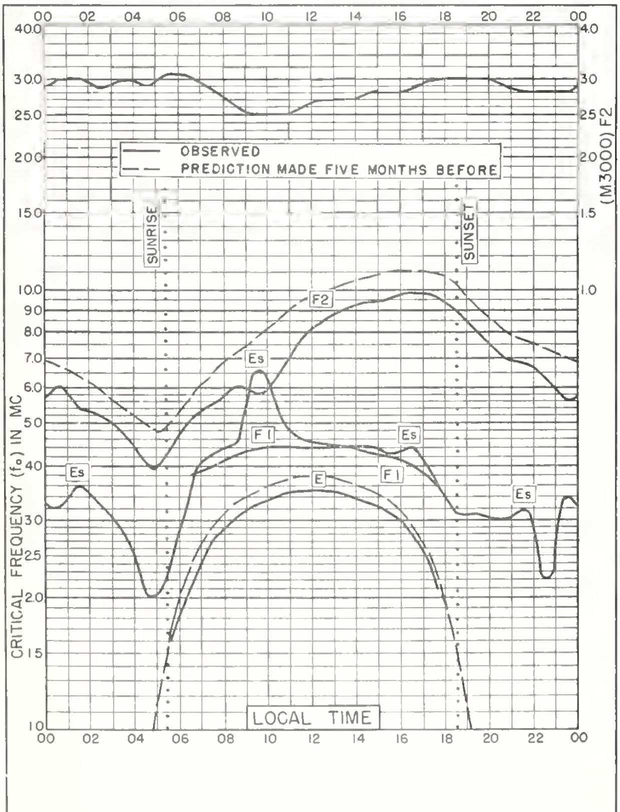


Fig. 27 MAUI, HAWAII
20.8°N, 156.5°W JUNE 1952

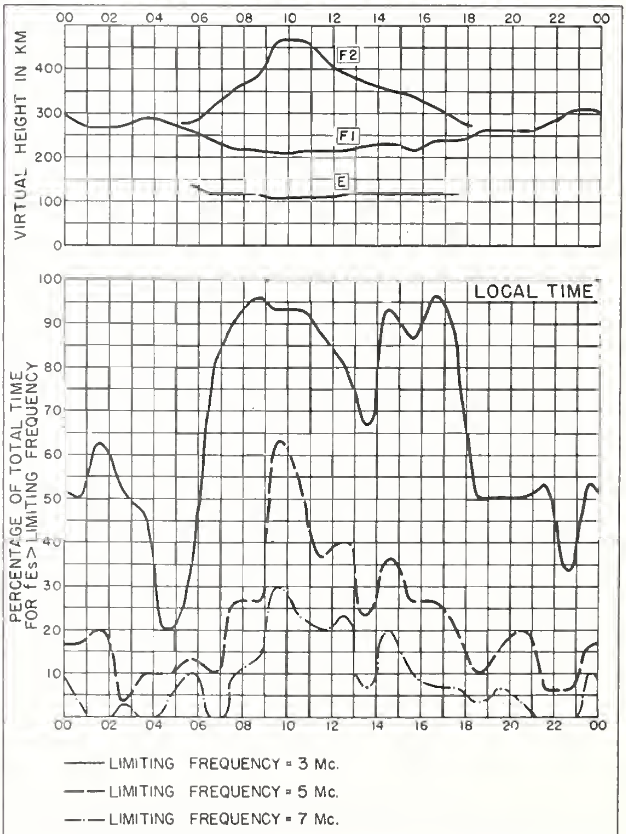


Fig. 28. MAUI, HAWAII JUNE 1952

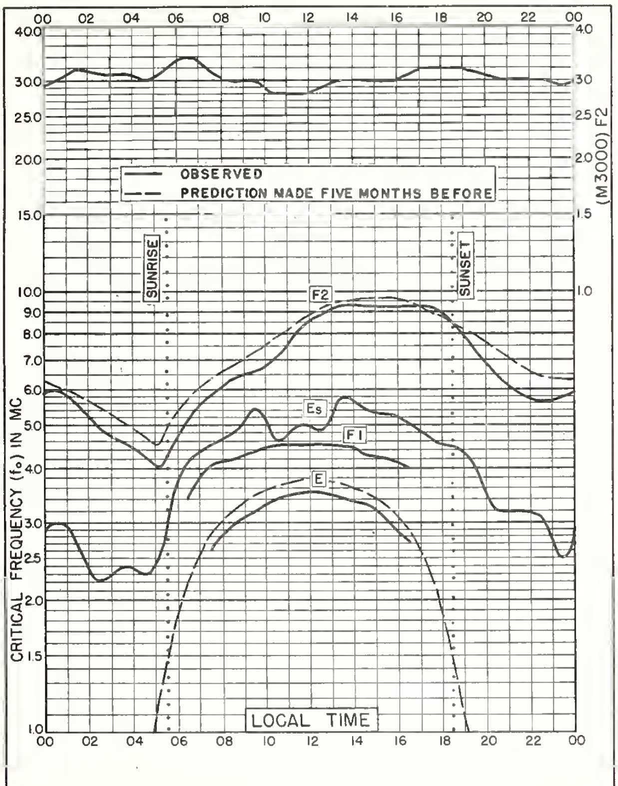


Fig. 29. PUERTO RICO, W. I.
18.5°N, 67.2°W JUNE 1952

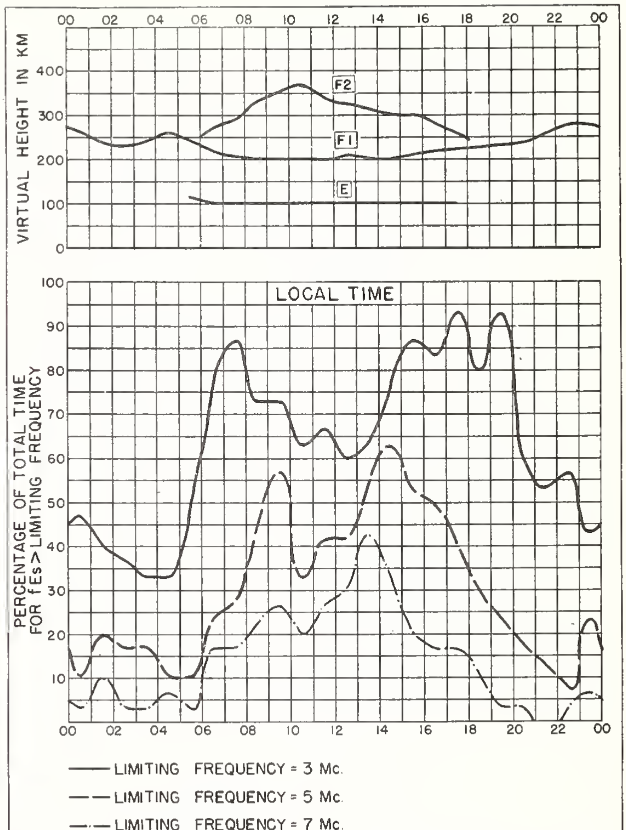


Fig. 30. PUERTO RICA, W. I. JUNE 1952

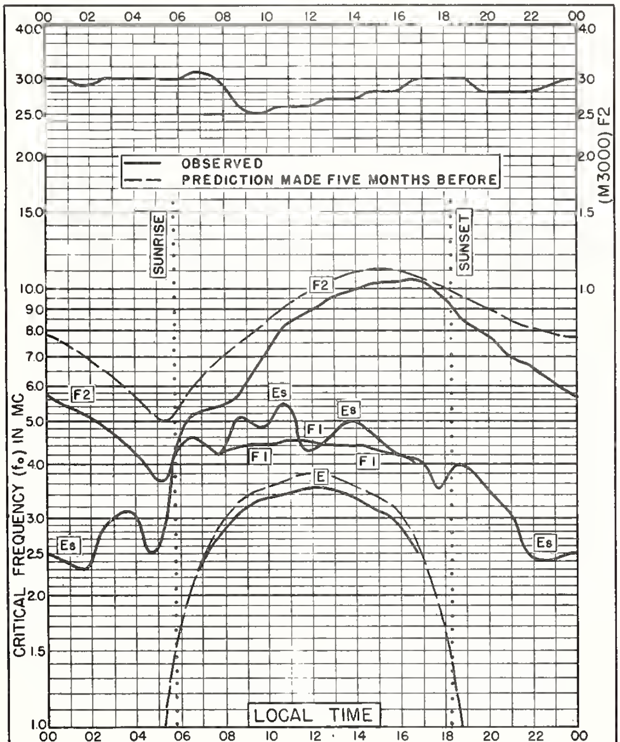


Fig. 31. PANAMA CANAL ZONE
9.4°N, 79.9°W JUNE 1952

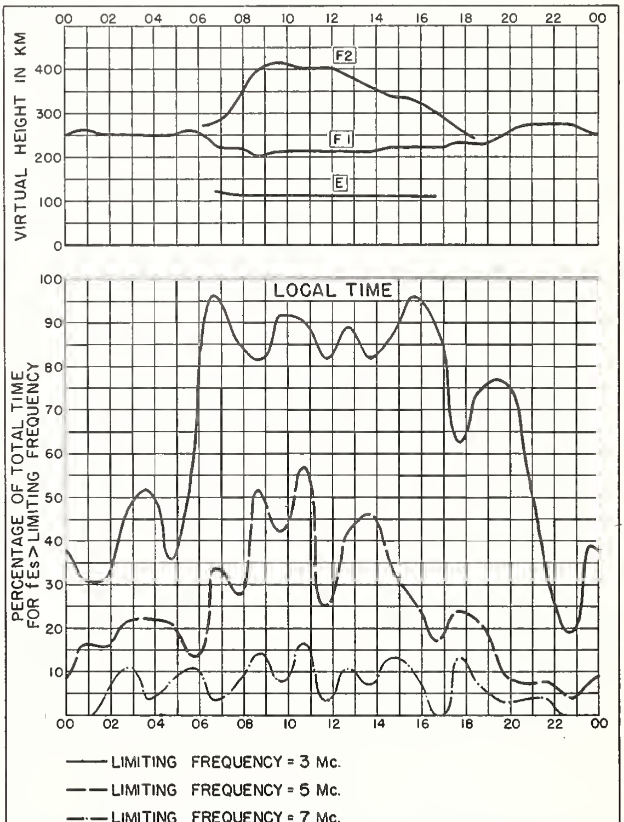


Fig. 32. PANAMA CANAL ZONE JUNE 1952

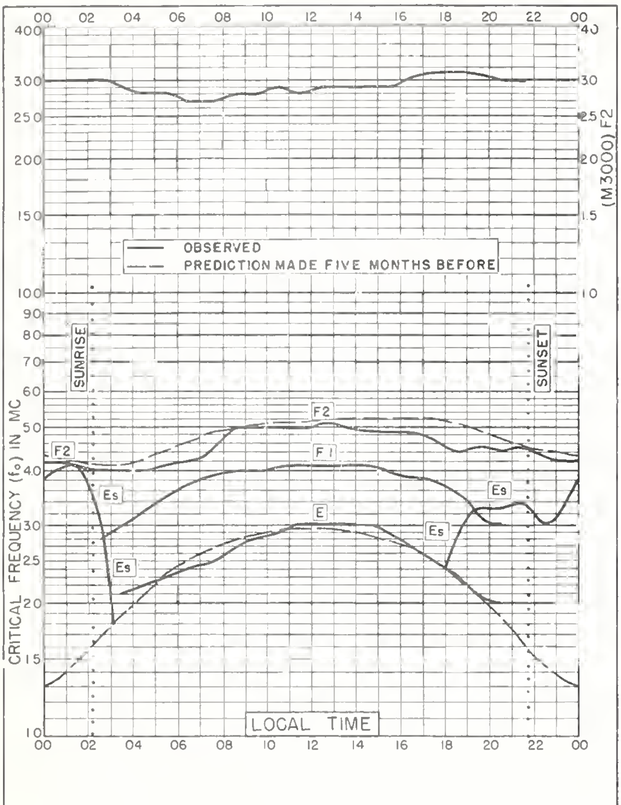


Fig. 33. KIRUNA, SWEDEN
67.8°N, 20.5°E MAY 1952

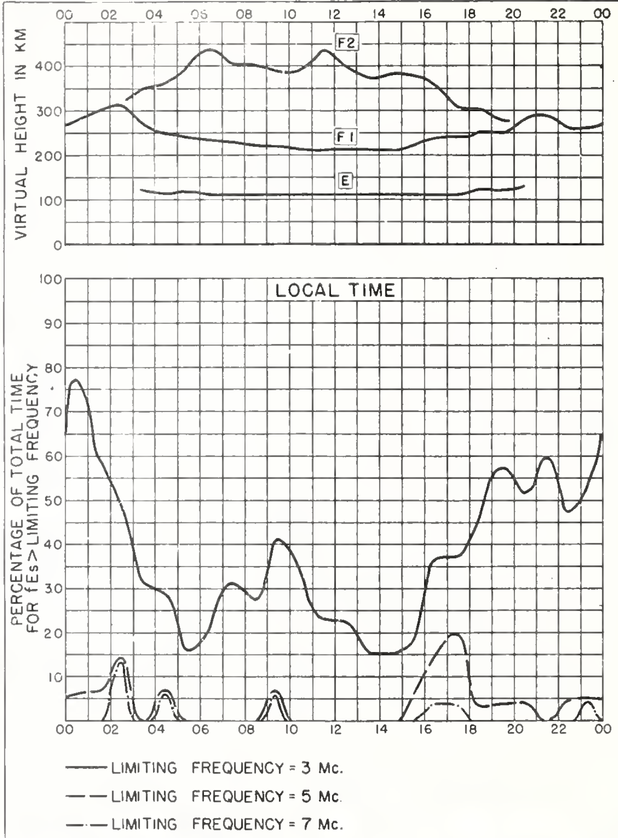


Fig. 34. KIRUNA, SWEDEN MAY 1952

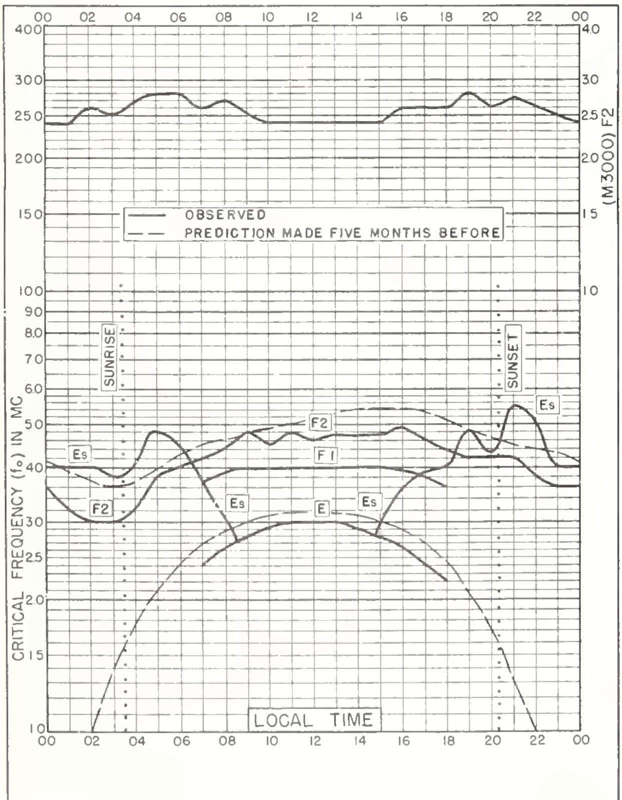


Fig. 35. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W MAY 1952

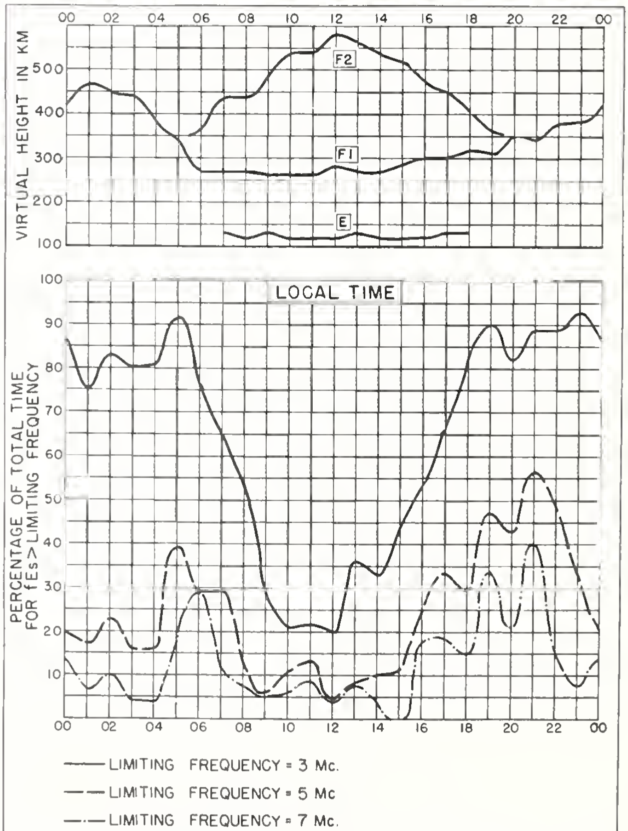


Fig. 36. NARSARSSUAK, GREENLAND MAY 1952

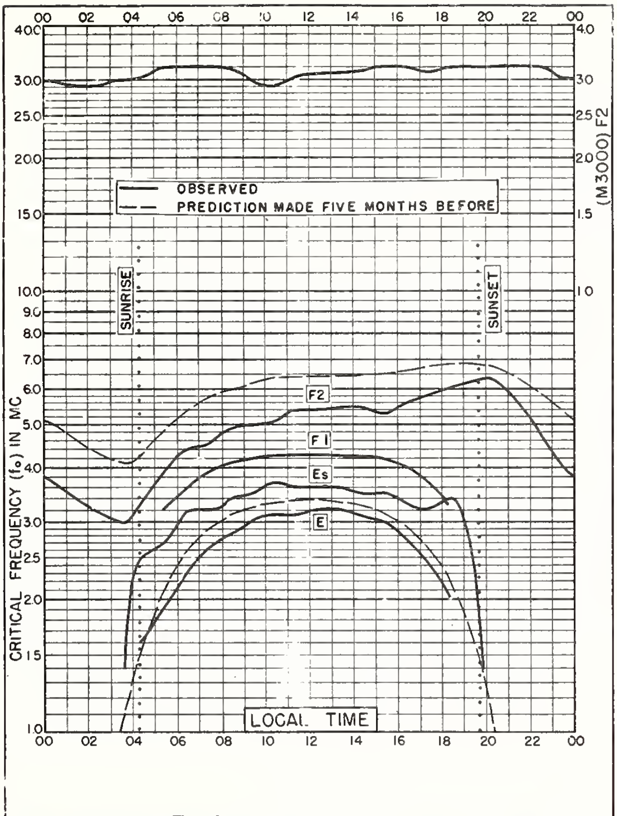


Fig. 37 De BILT, HOLLAND
52.1°N, 5.2°E MAY 1952

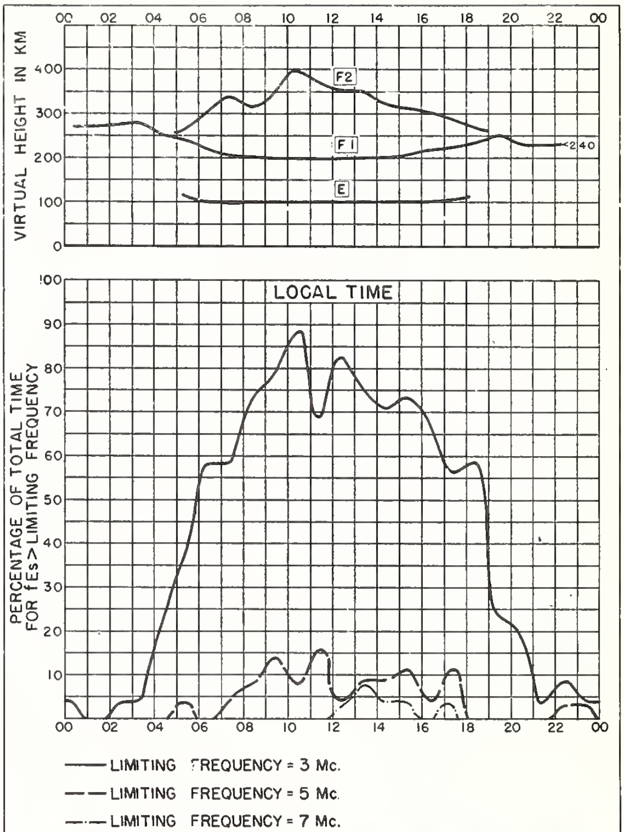


Fig. 38. De BILT, HOLLAND MAY 1952

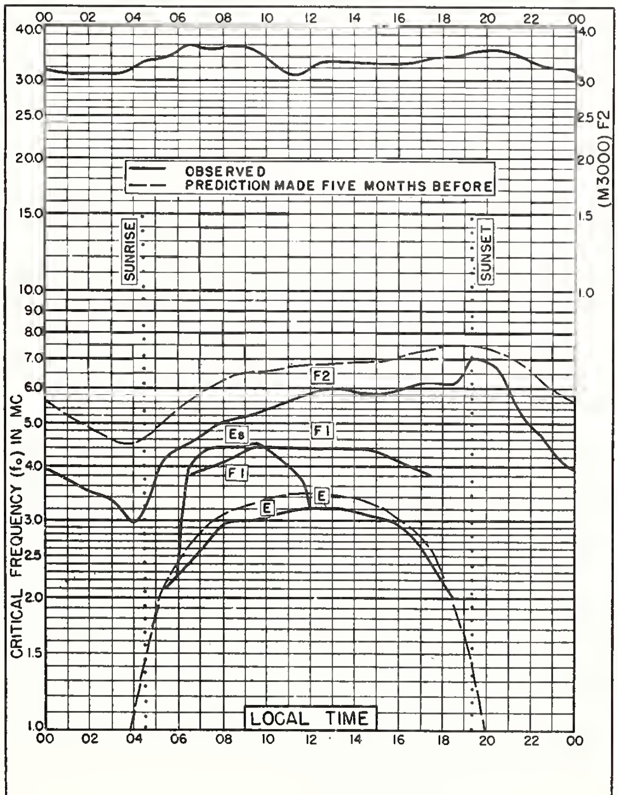


Fig. 39. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E MAY 1952

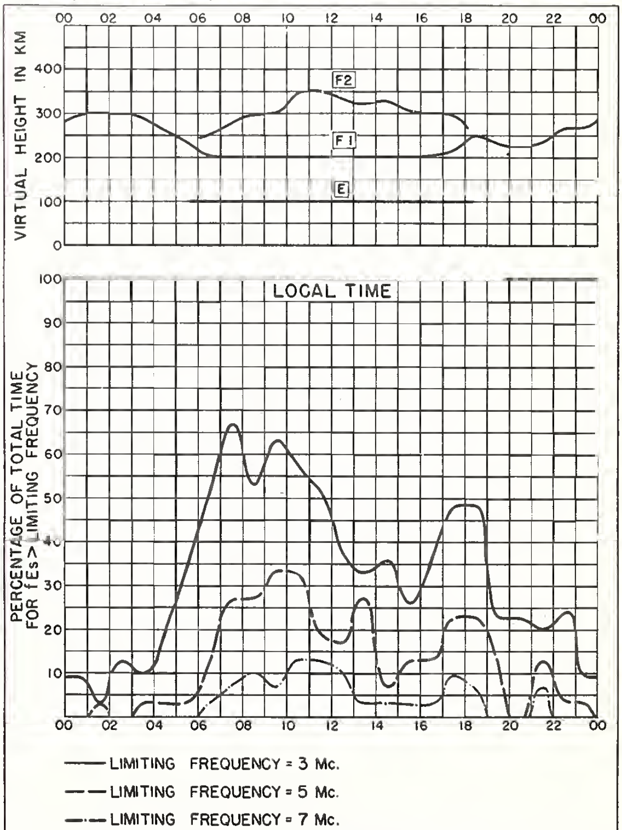


Fig. 40. SCHWARZENBURG, SWITZERLAND MAY 1952

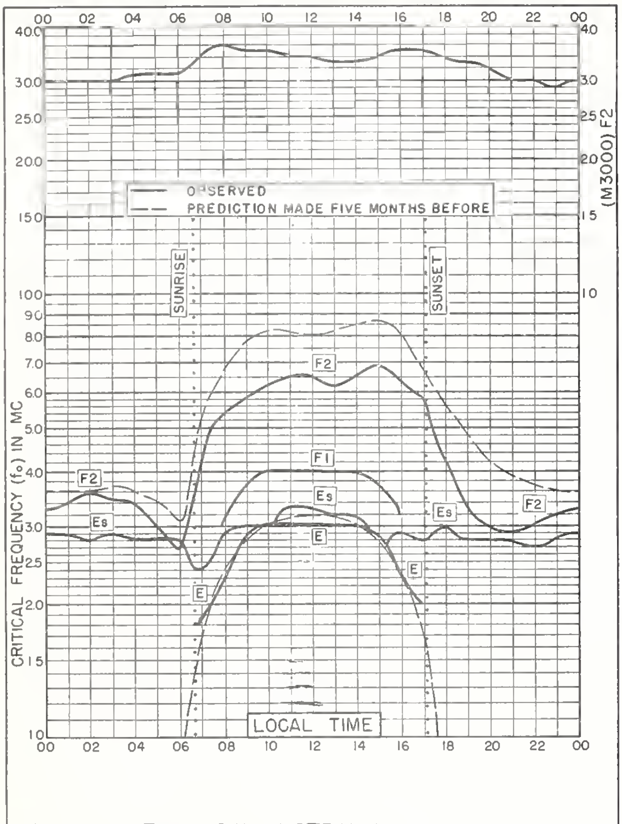


Fig. 41. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E MAY 1952

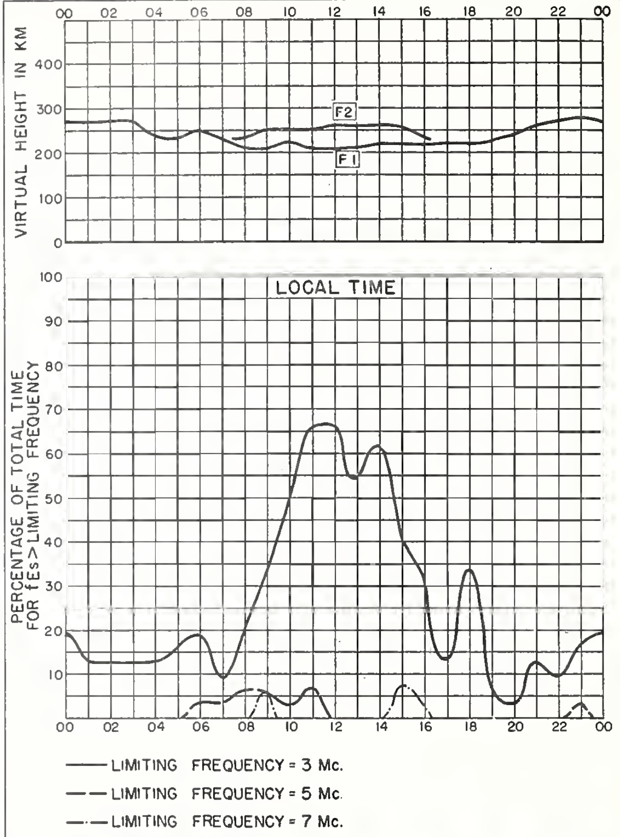


Fig. 42. WATHEROO, W. AUSTRALIA MAY 1952

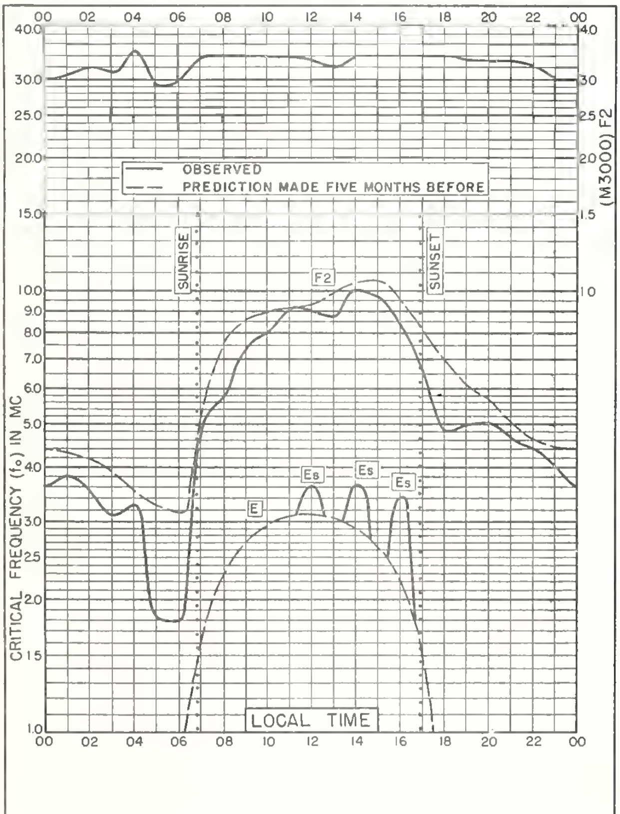


Fig. 43. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W MAY 1952

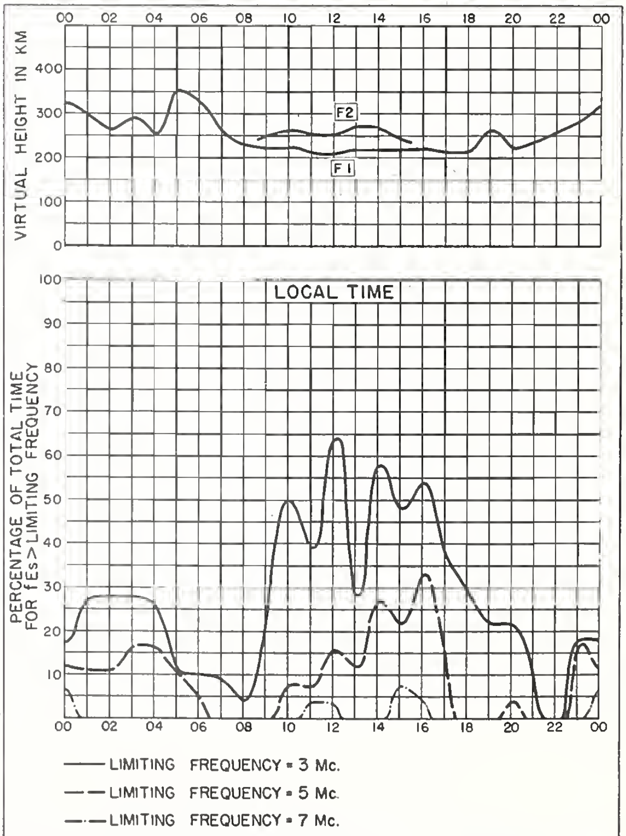


Fig. 44. BUENOS AIRES, ARGENTINA MAY 1952

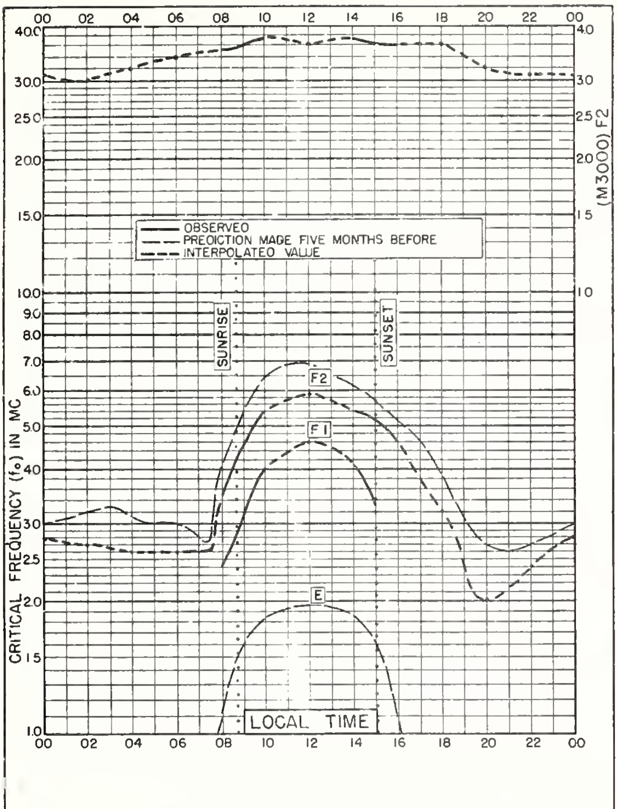


Fig. 45. DECEPCION I.
63.0°S, 60.7°W MAY 1952

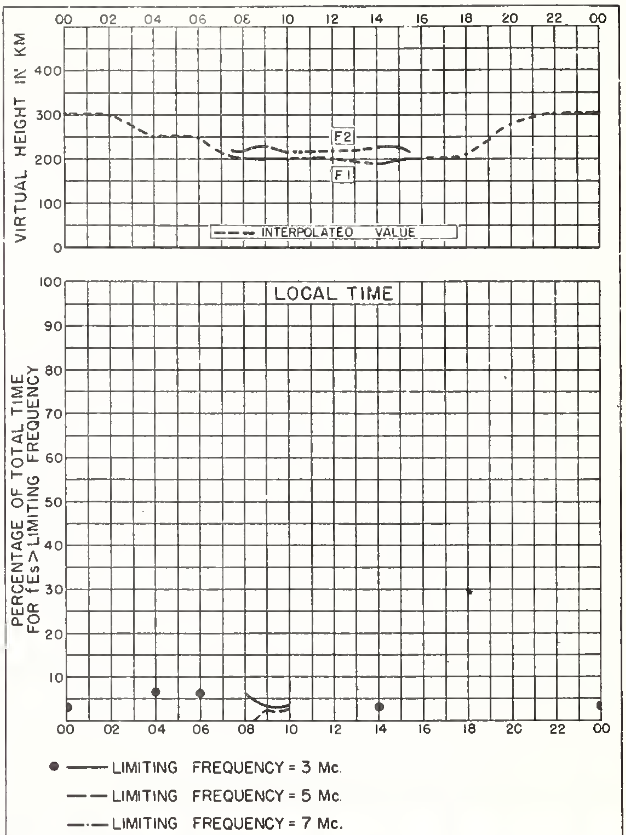


Fig. 46. DECEPCION I. MAY 1952

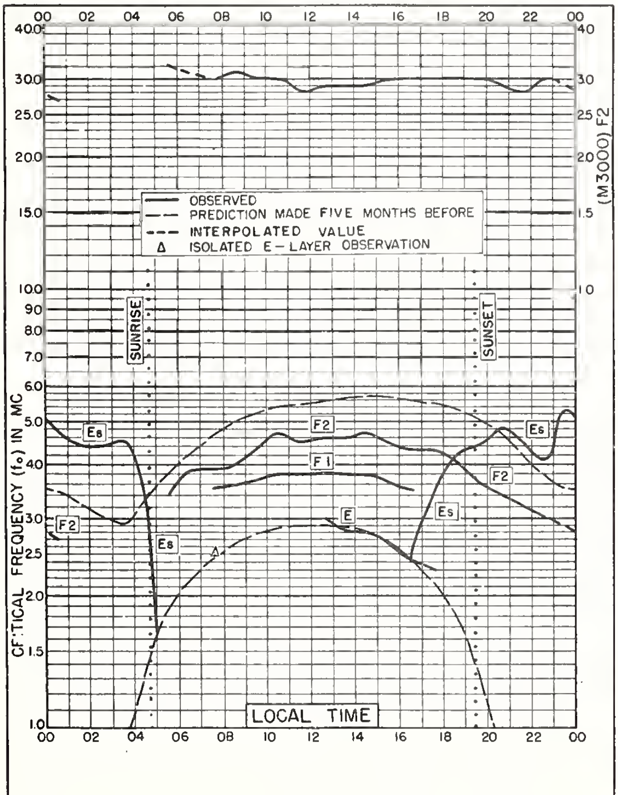


Fig. 47. REYKJAVIK, ICELAND
64.1°N, 21.8°W APRIL 1952

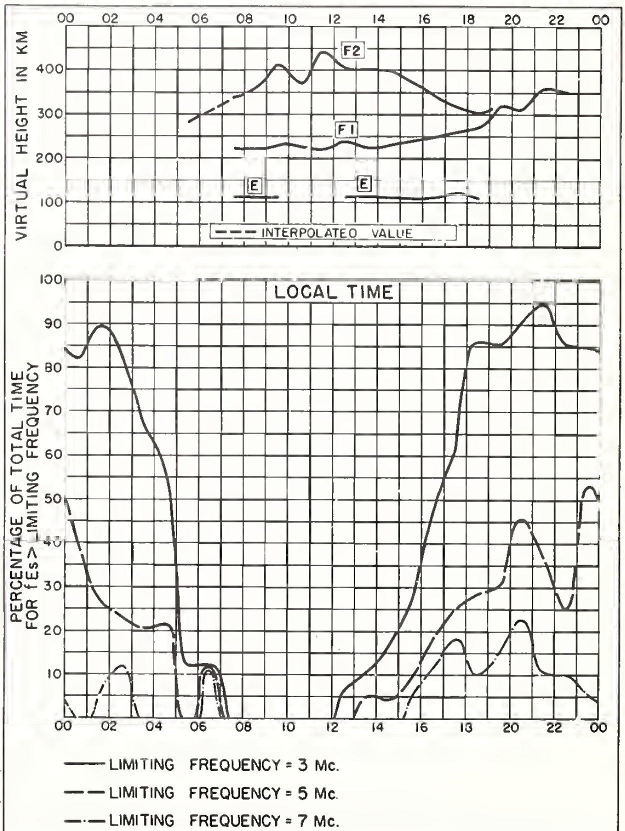


Fig. 48. REYKJAVIK, ICELAND APRIL 1952

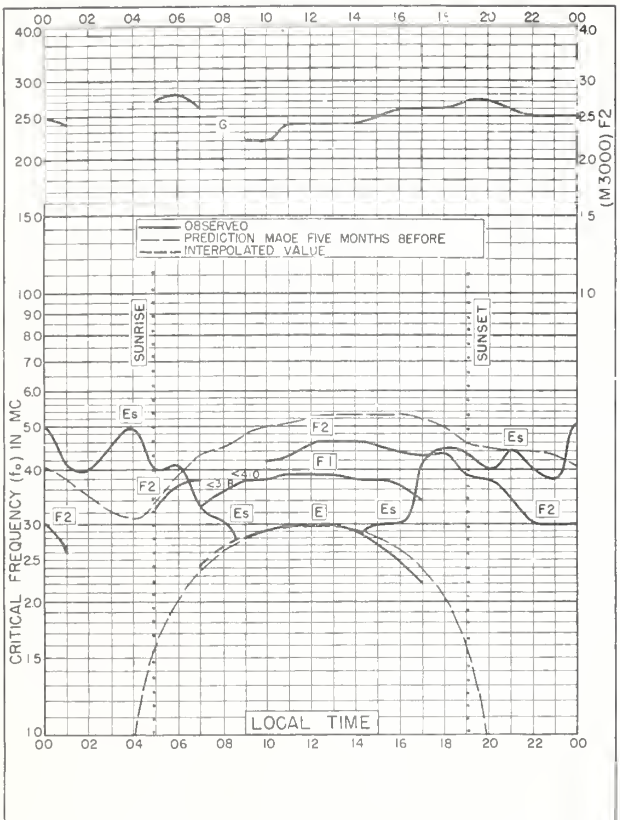


Fig. 49. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W APRIL 1952

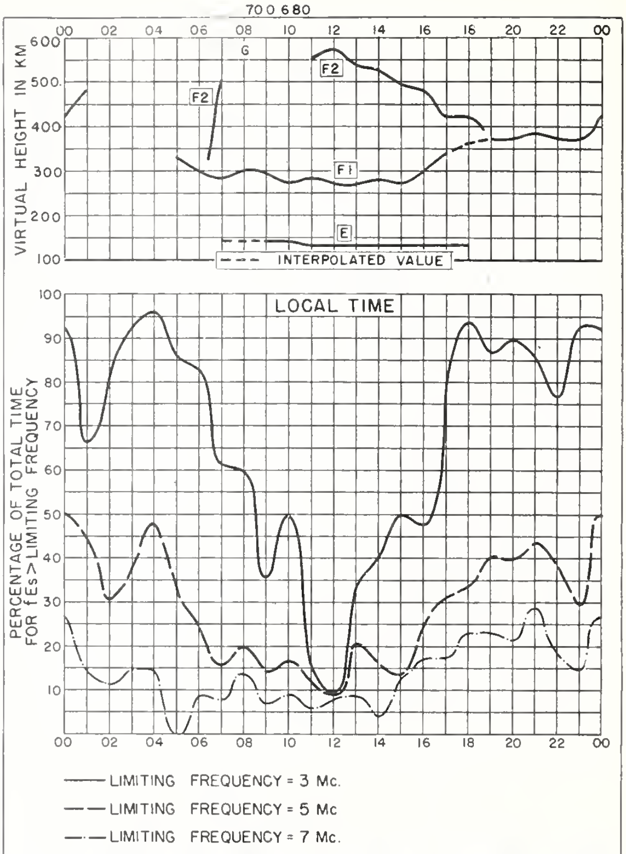


Fig. 50. NARSARSSUAK, GREENLAND APRIL 1952

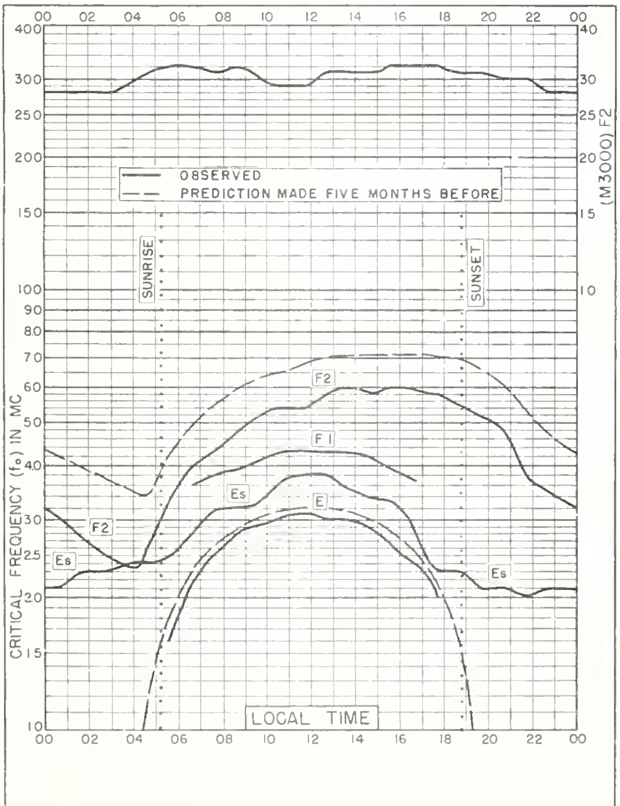


Fig. 51. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E APRIL 1952

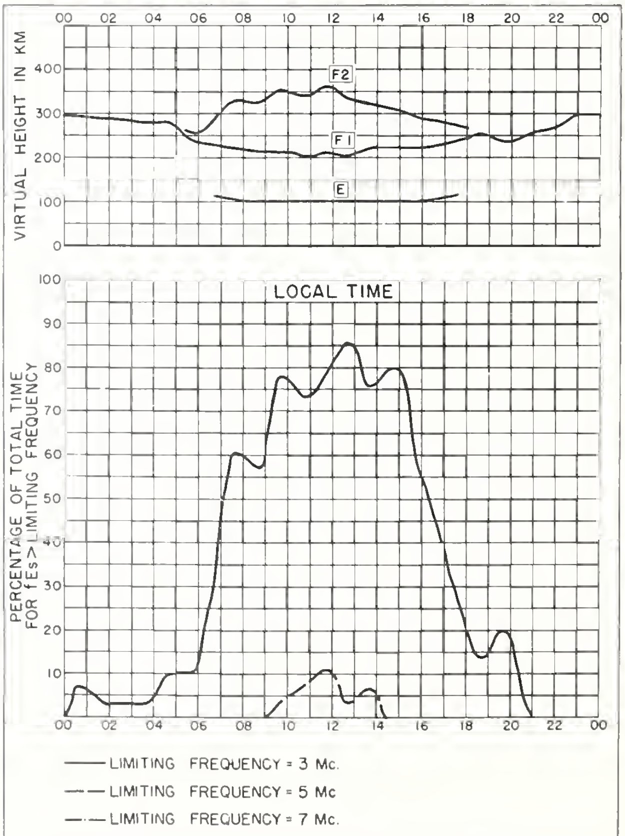


Fig. 52. LINDAU/HARZ, GERMANY APRIL 1952

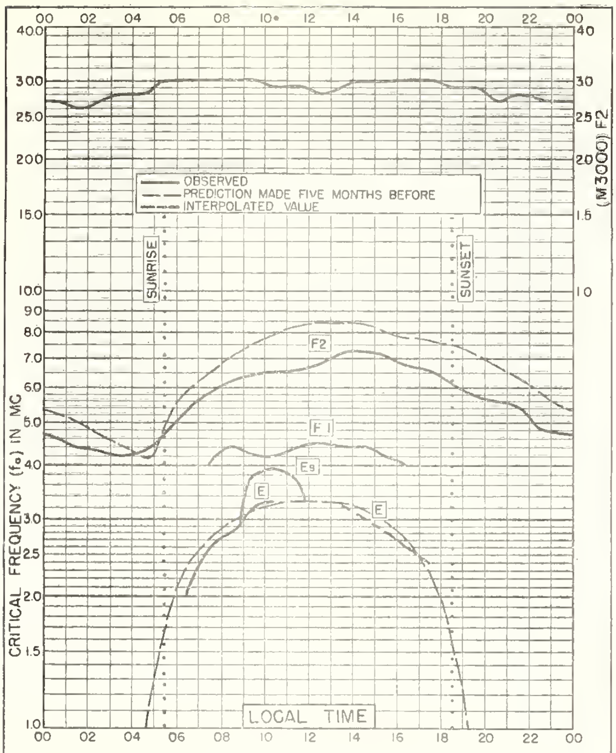


Fig. 53. WAKKANAI, JAPAN
45.4°N, 141.7°E APRIL 1952

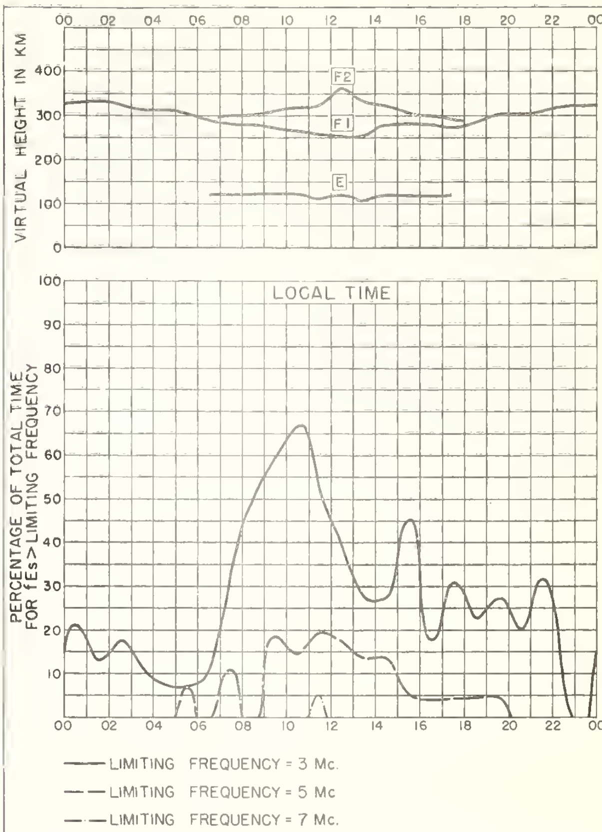


Fig. 54. WAKKANAI, JAPAN APRIL 1952

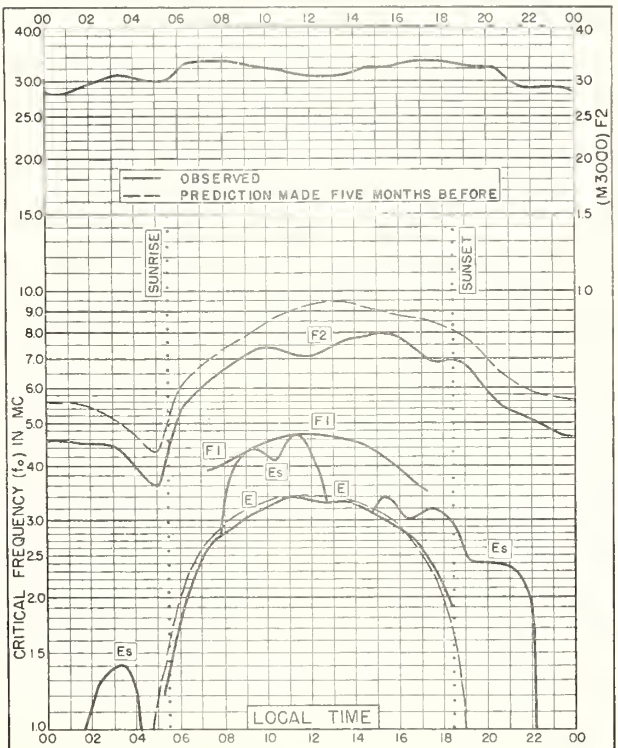


Fig. 55. AKITA, JAPAN
39.7°N, 140.1°E APRIL 1952

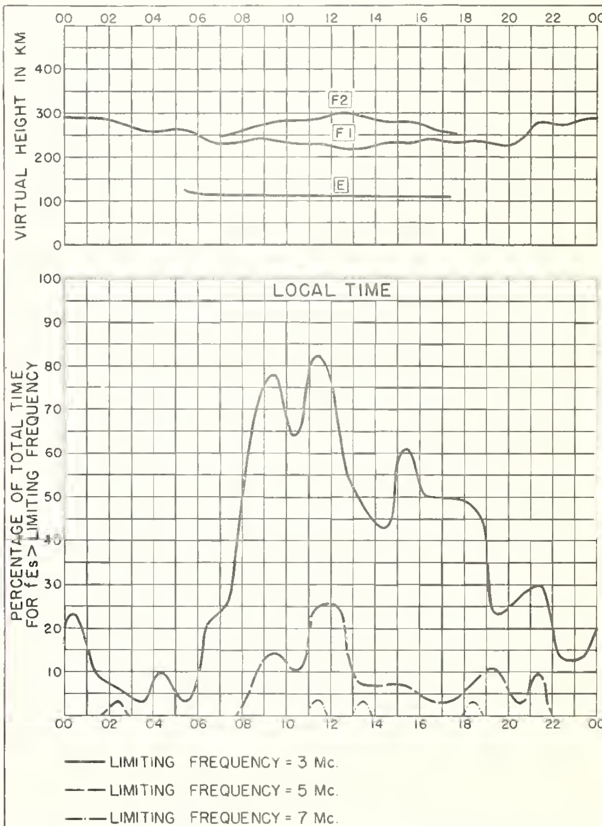


Fig. 56. AKITA, JAPAN APRIL 1952

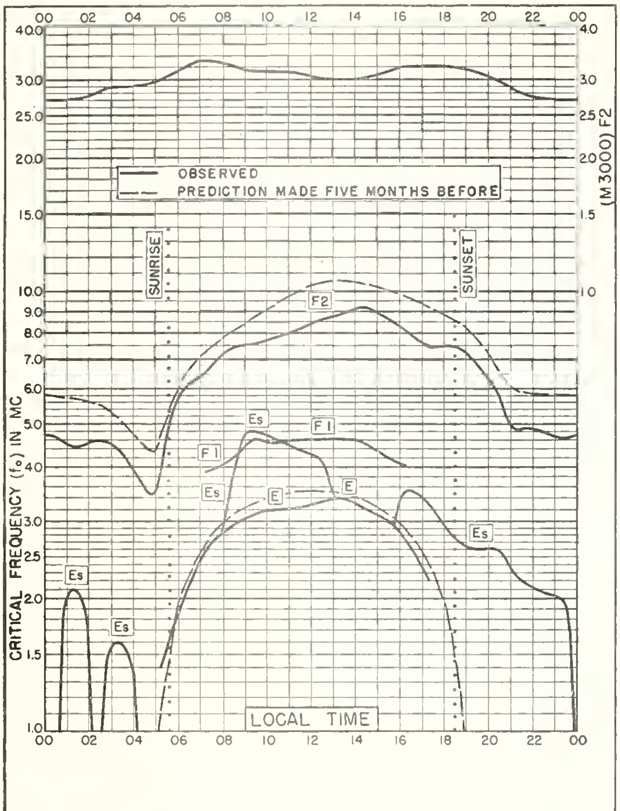


Fig. 57. TOKYO, JAPAN
35.7°N, 139.5°E APRIL 1952

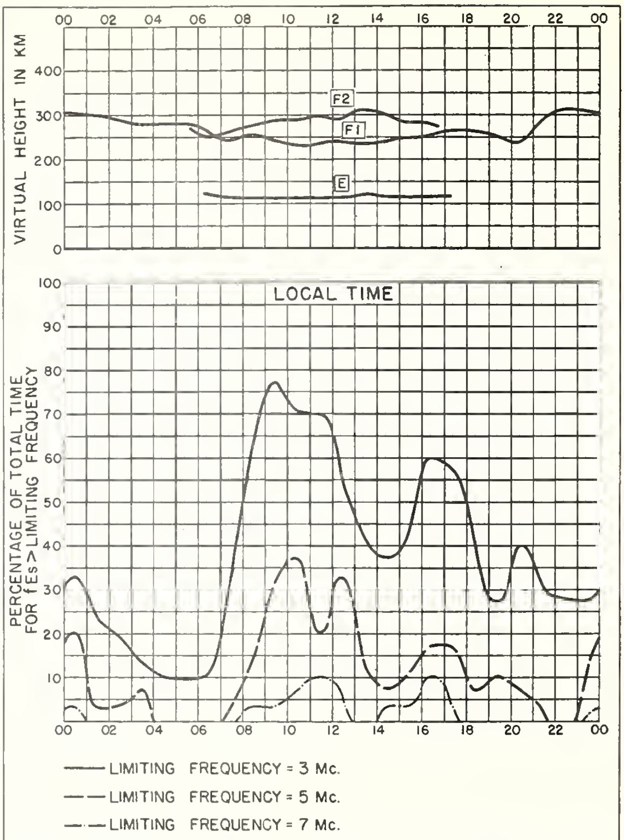


Fig. 58. TOKYO, JAPAN APRIL 1952

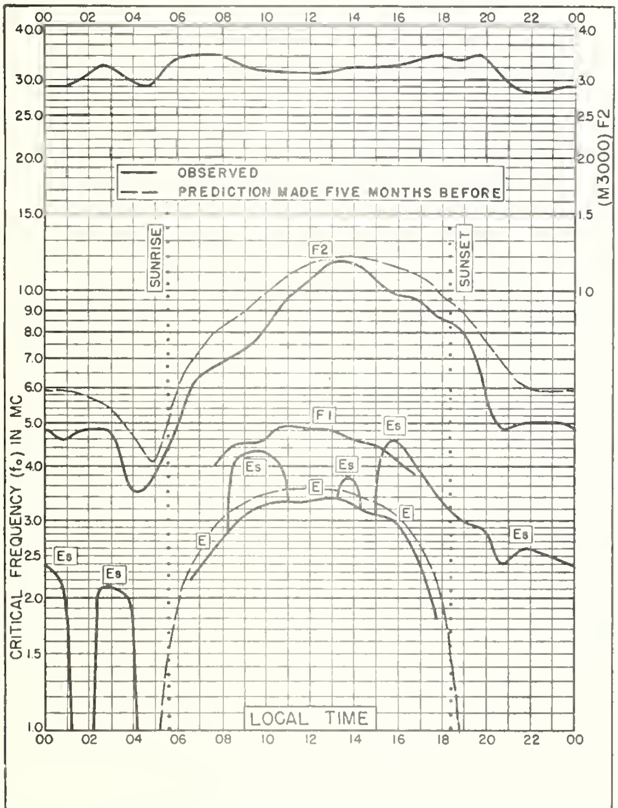


Fig. 59. YAMAGAWA, JAPAN
31.2°N, 130.6°E APRIL 1952

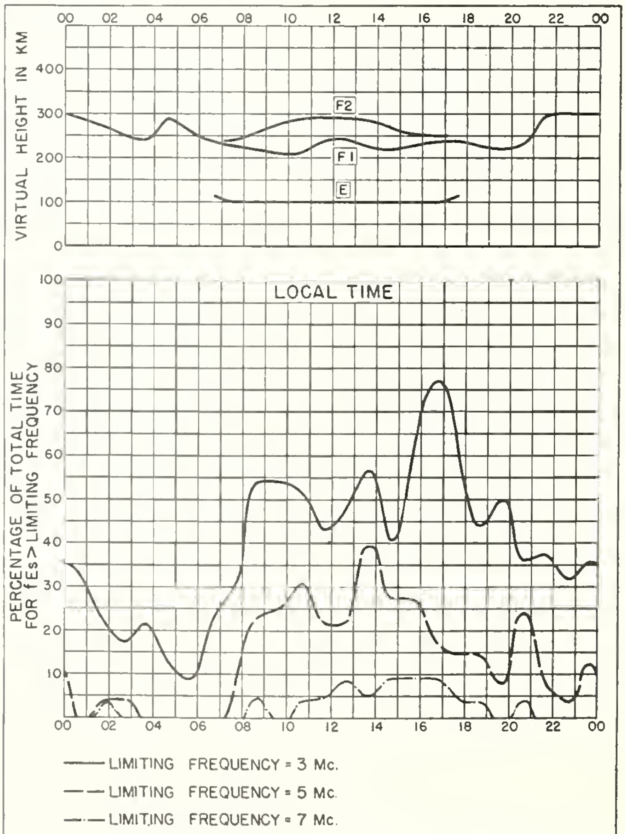


Fig. 60. YAMAGAWA, JAPAN APRIL 1952

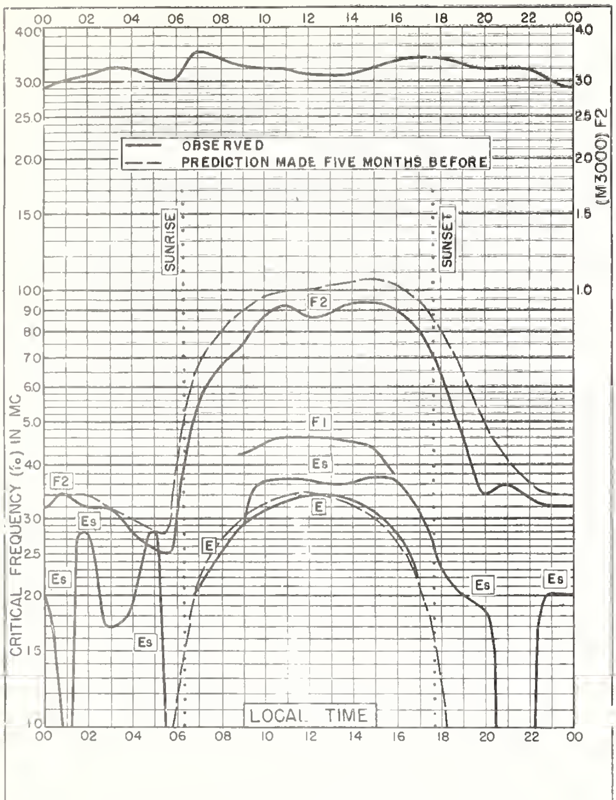


Fig. 61. JOHANNESBURG, U. OF S. AFRICA
26.2°S, 28.1°E APRIL 1952

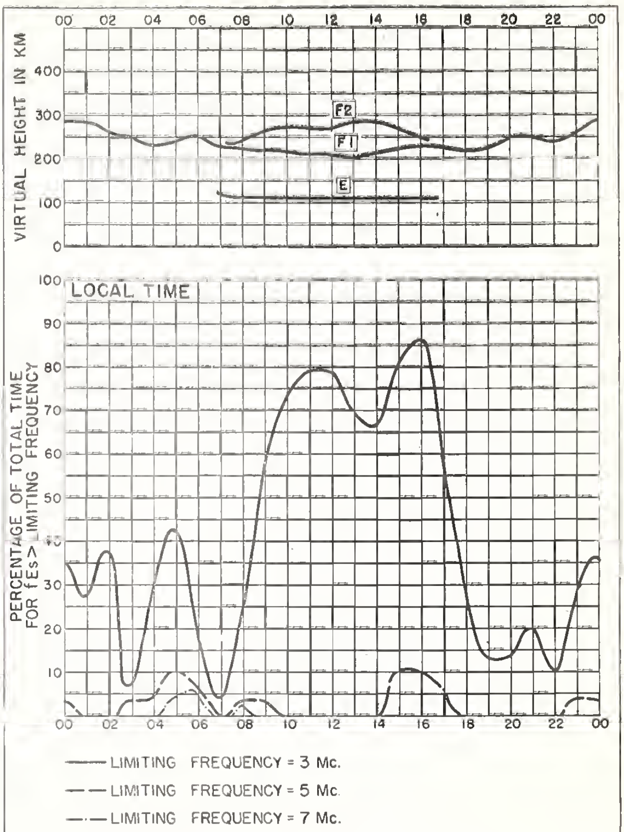


Fig. 62. JOHANNESBURG, U. OF S. AFRICA APRIL 1952

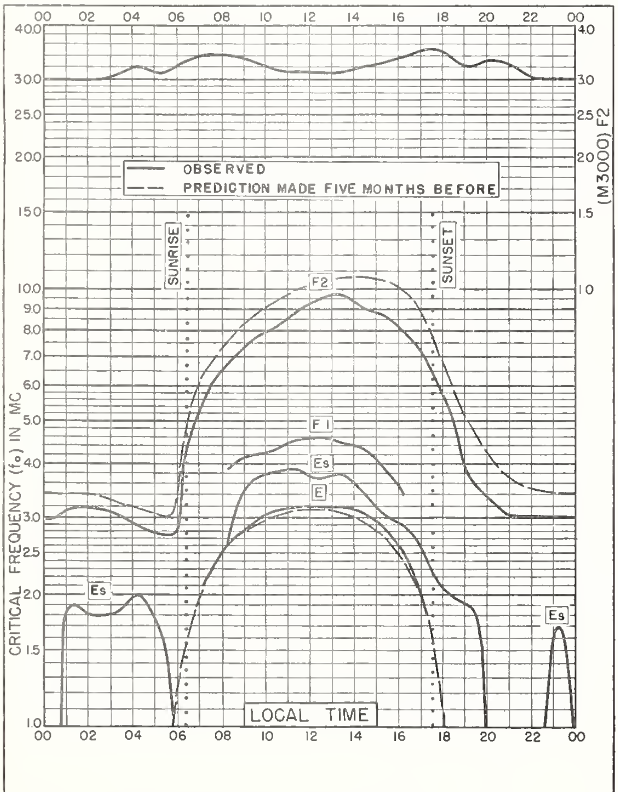


Fig. 63. CAPETOWN, U. OF S. AFRICA
34.2°S, 18.3°E APRIL 1952

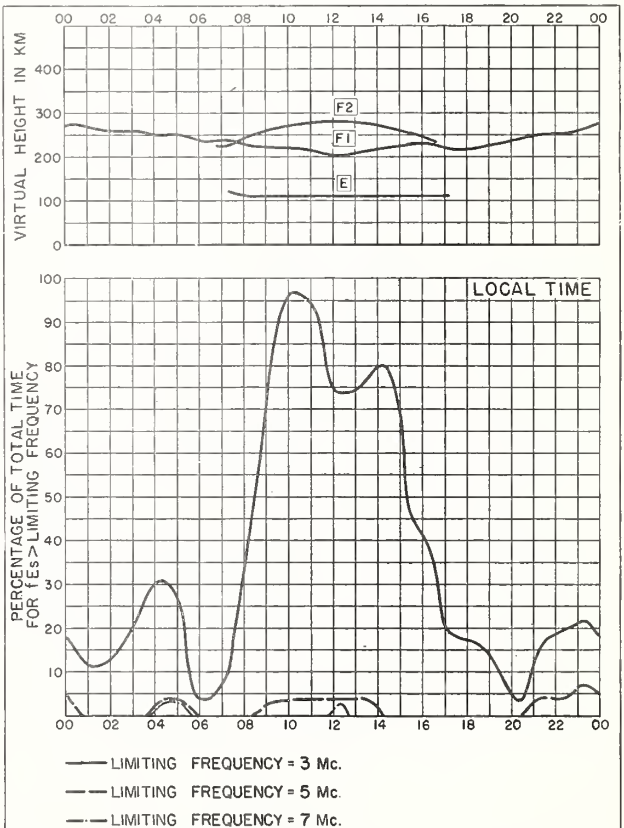


Fig. 64. CAPETOWN, U. OF S. AFRICA APRIL 1952

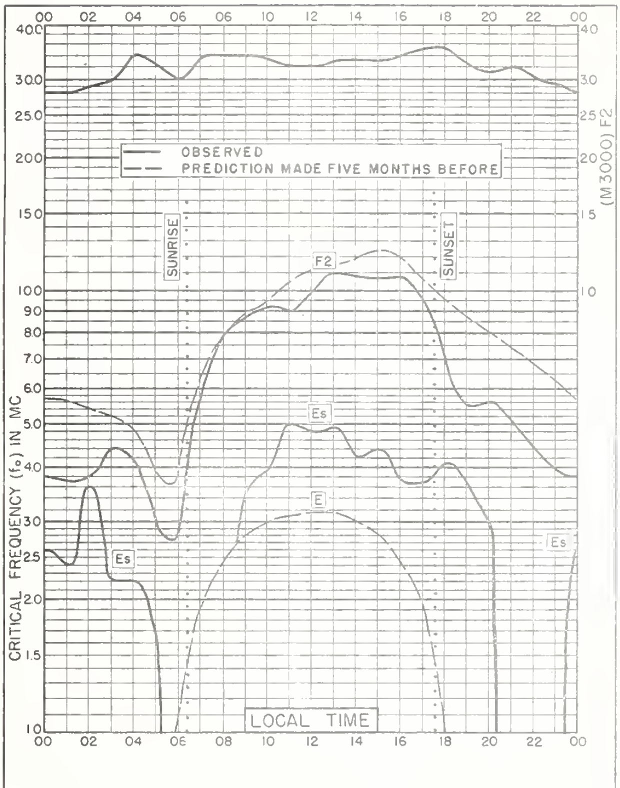


Fig. 65 BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W APRIL 1952

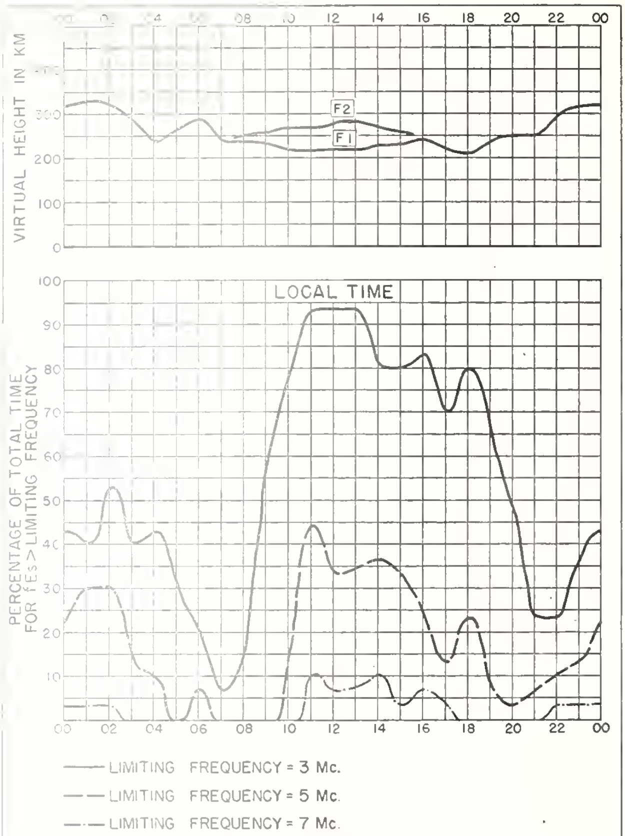


Fig 66. BUENOS AIRES, ARGENTINA APRIL 1952

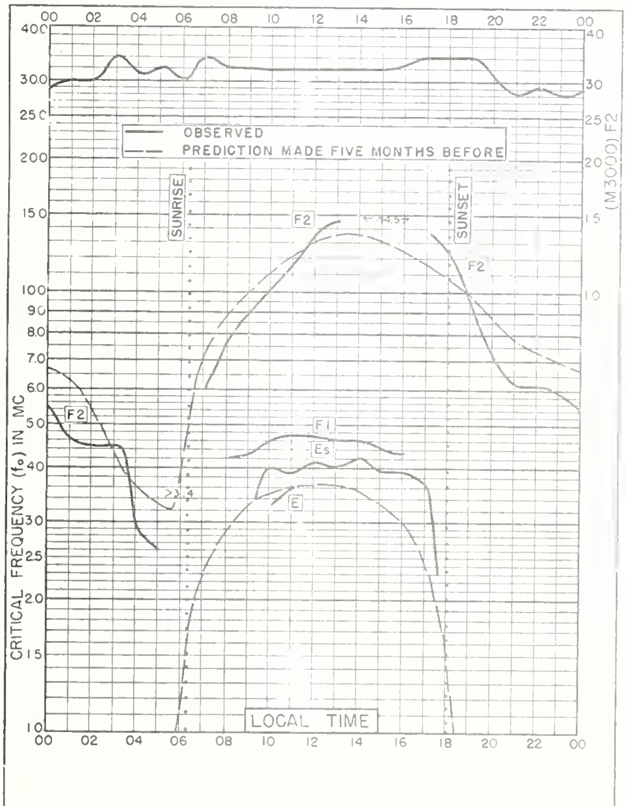


Fig. 67. FORMOSA, CHINA
25.0°N, 121.5°E MARCH 1952

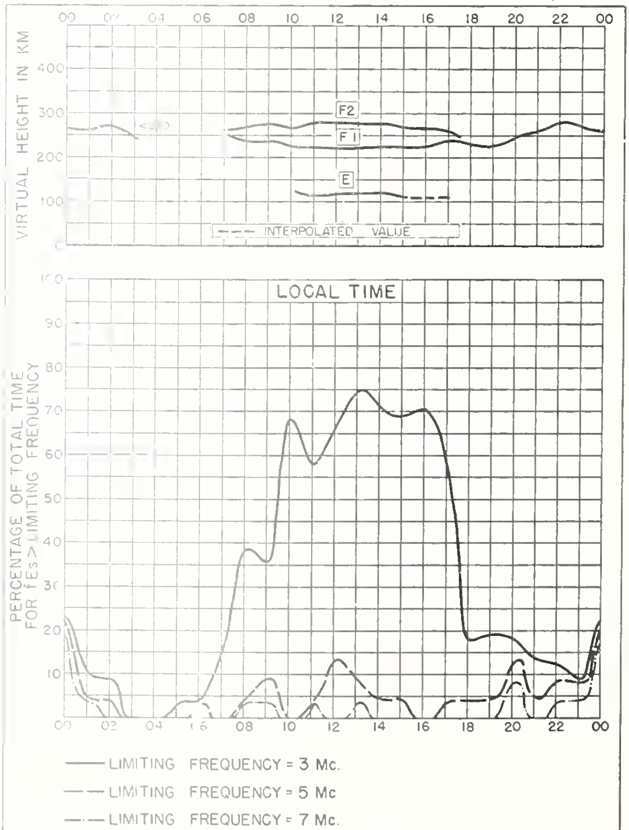


Fig 68. FORMOSA, CHINA MARCH 1952

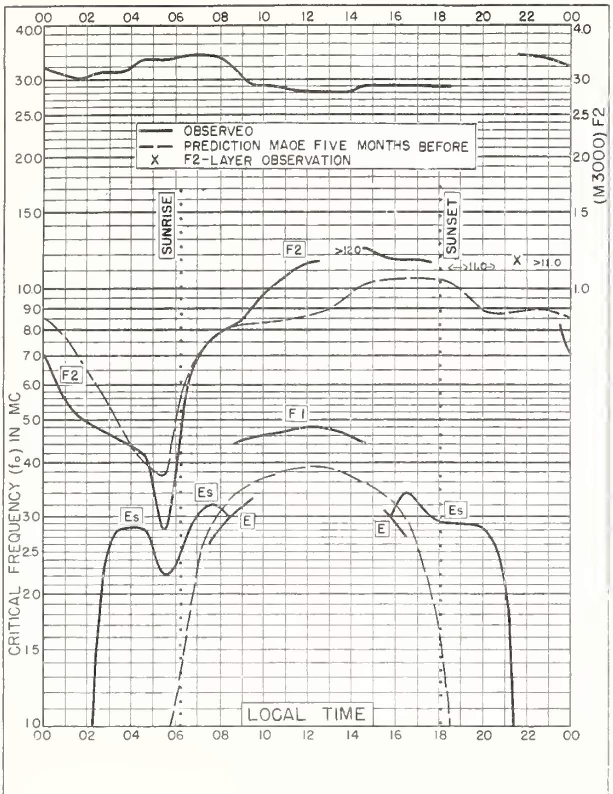


Fig. 69. NAIROBI, KENYA
1.0°S, 37.0°E MARCH 1952

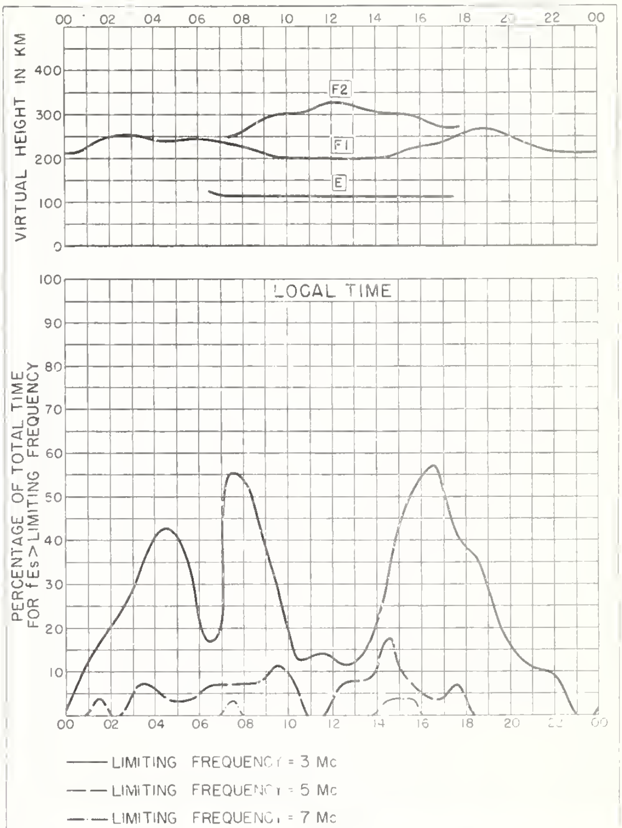


Fig 70. NAIROBI, KENYA MARCH 1952

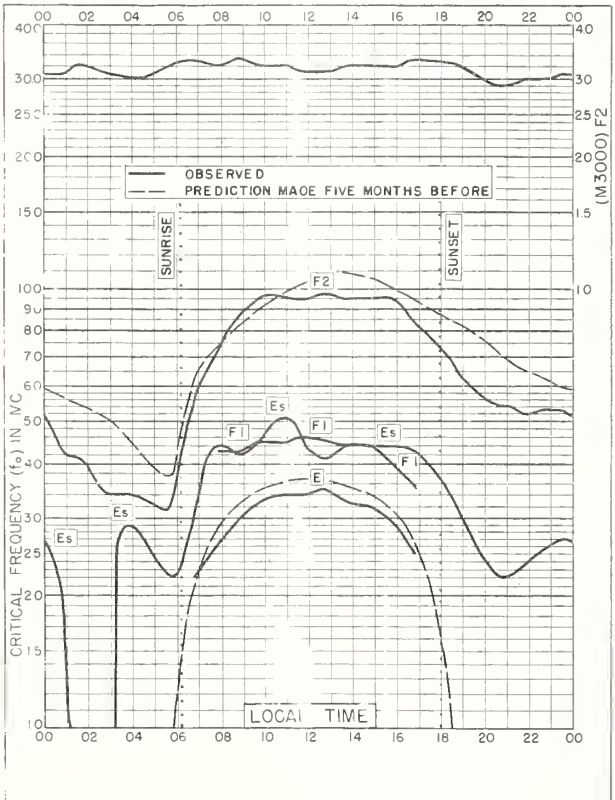


Fig. 71. TOWNSVILLE, AUSTRALIA
19.3°S, 146.8°E MARCH 1952

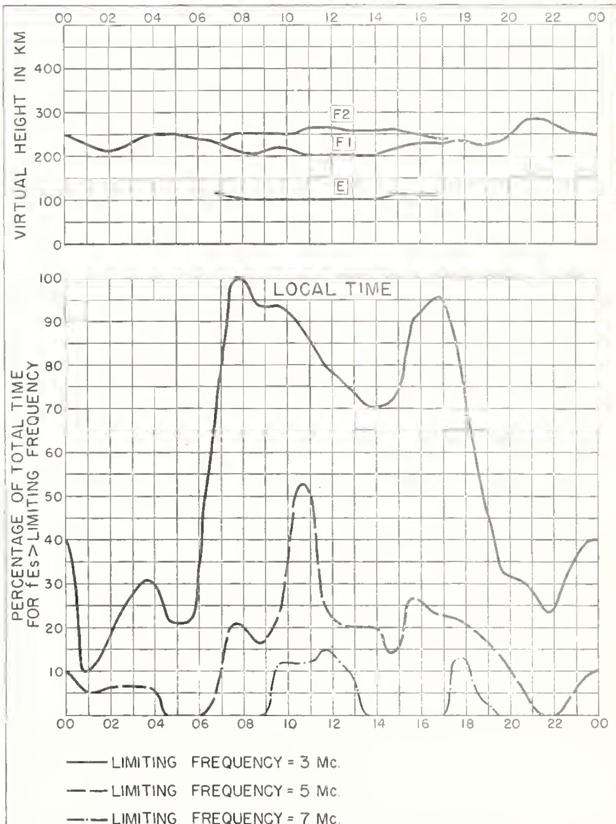
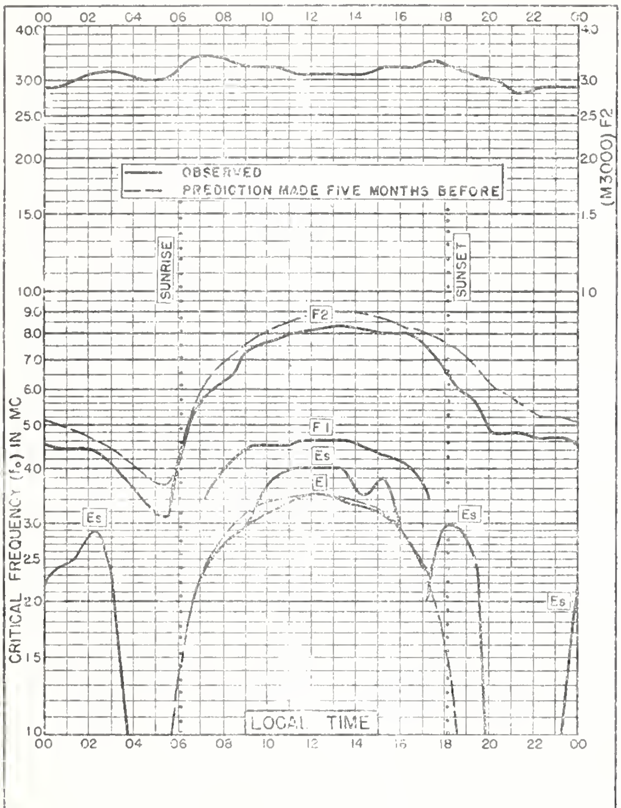


Fig. 72. TOWNSVILLE, AUSTRALIA MARCH 1952



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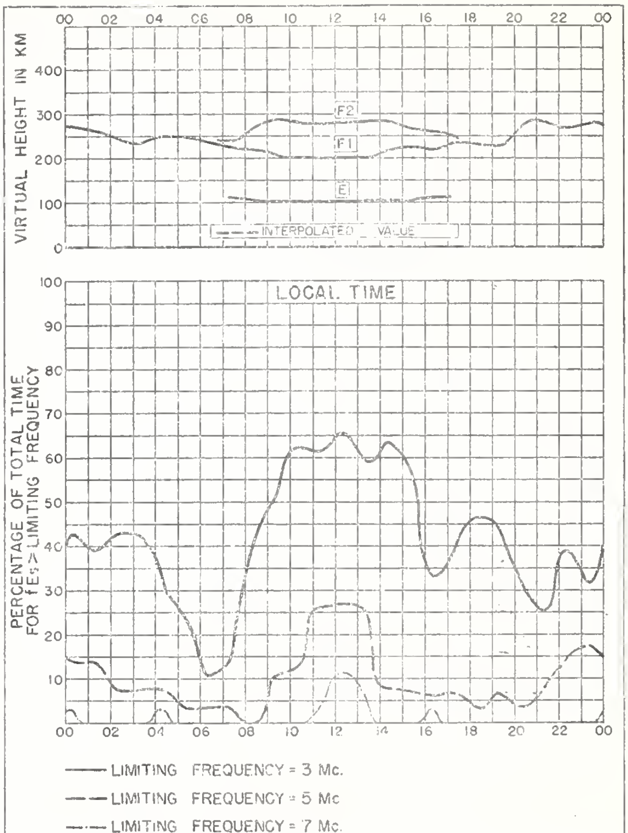

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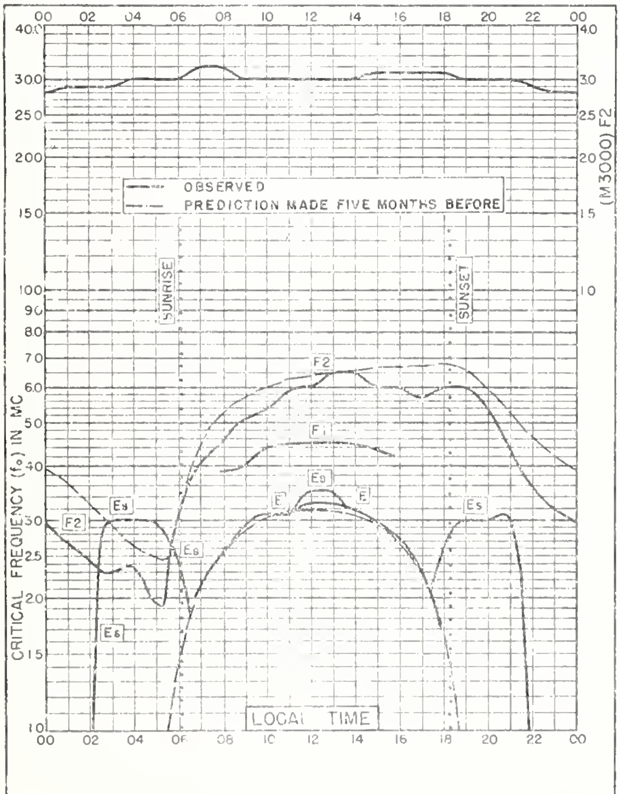

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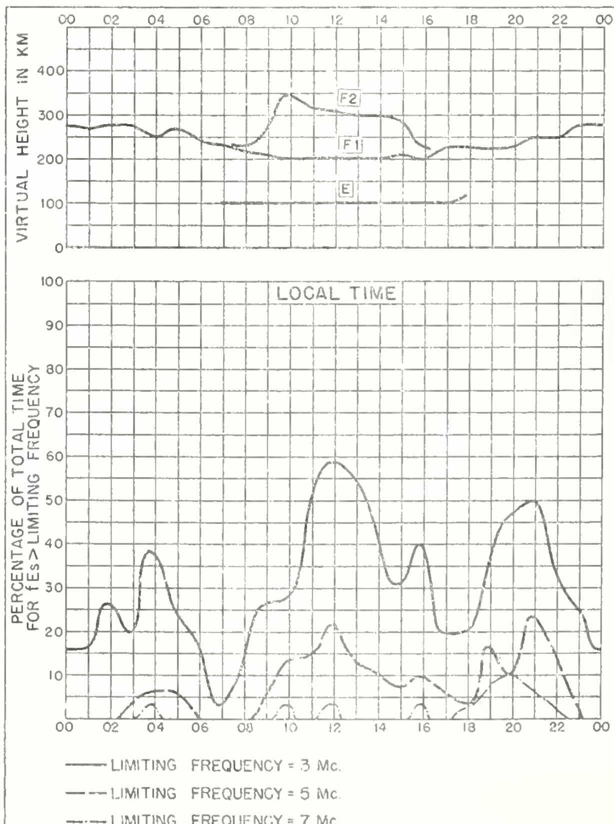

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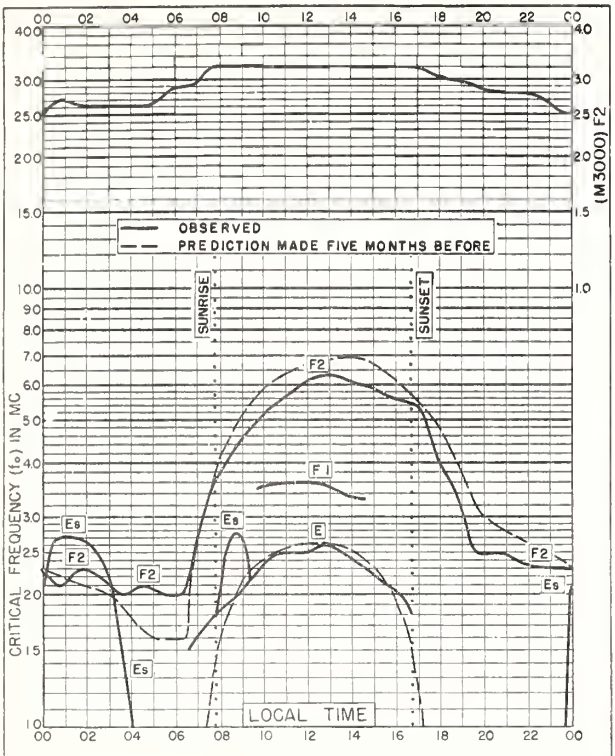

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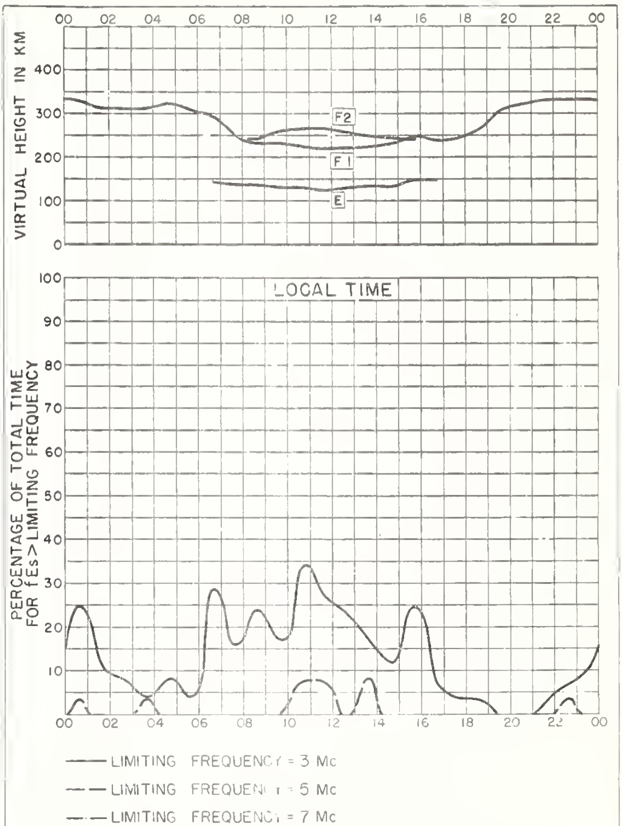

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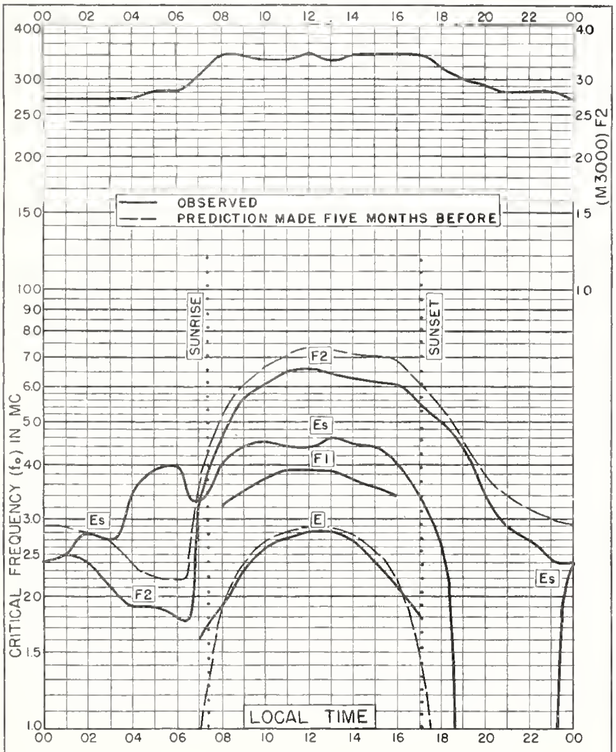

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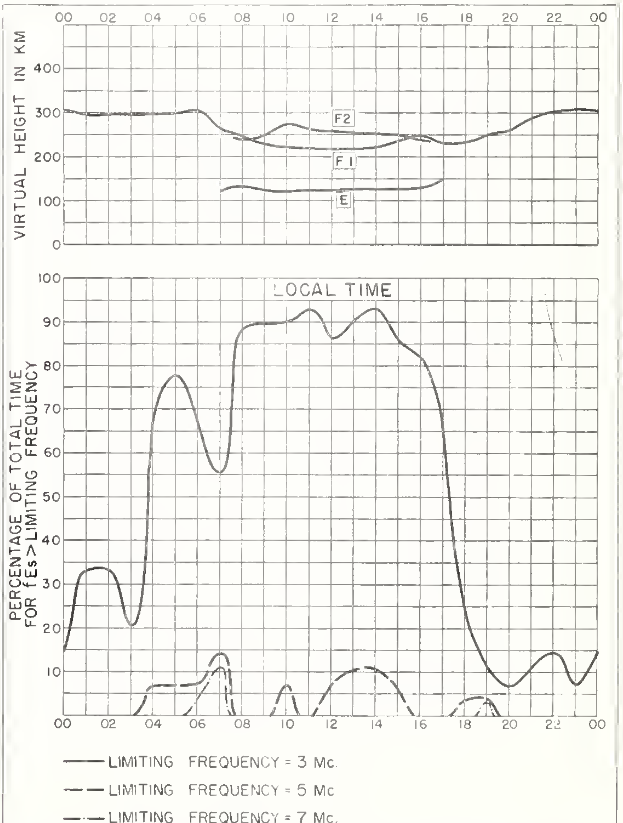

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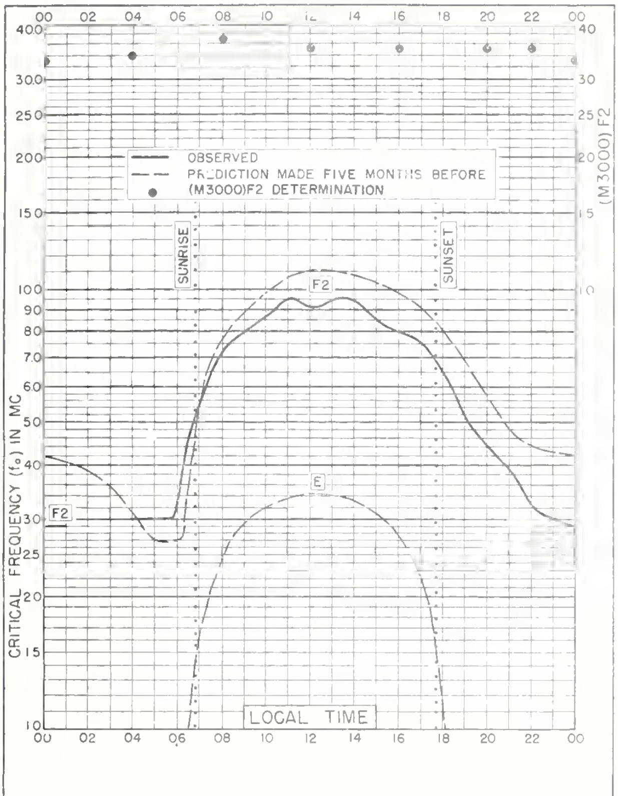

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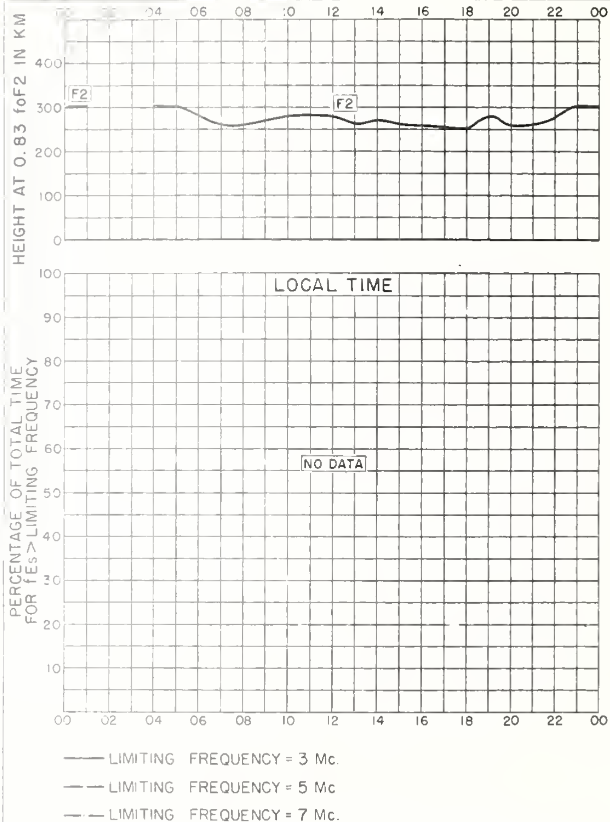

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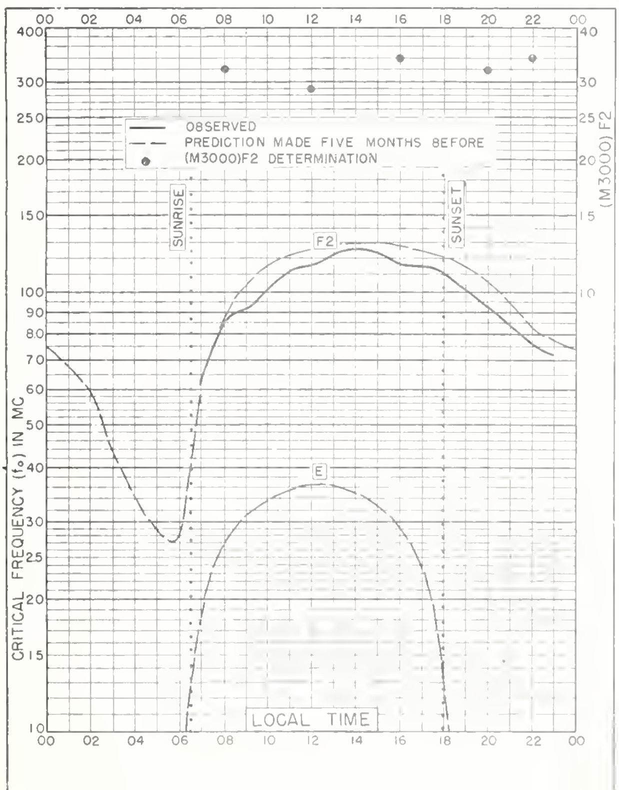

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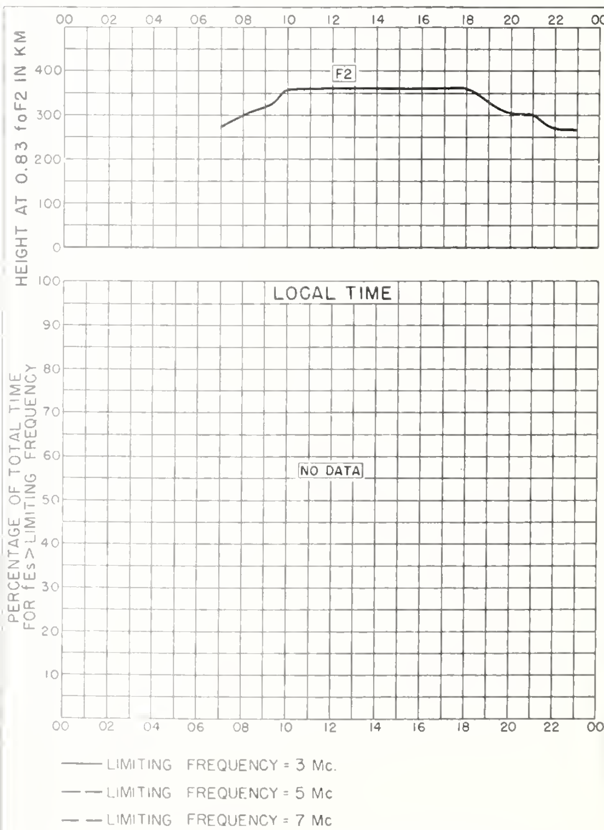

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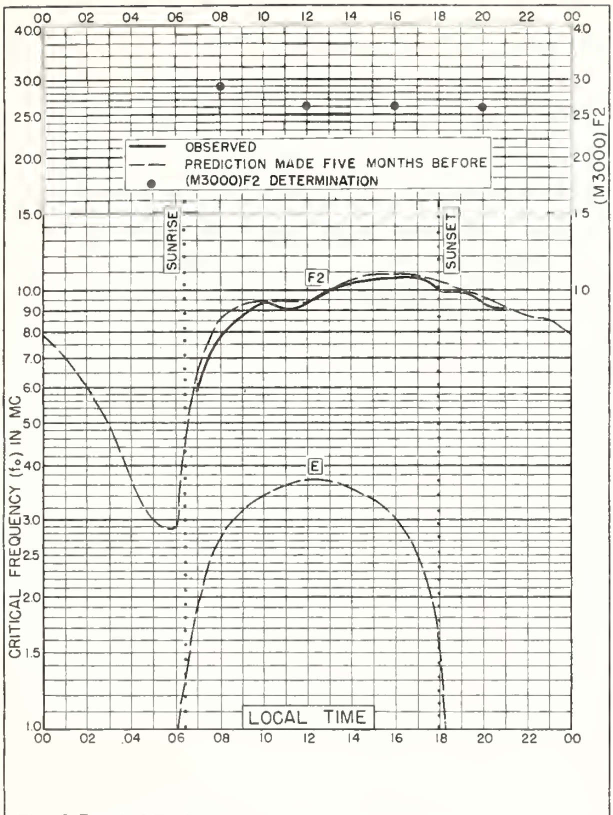

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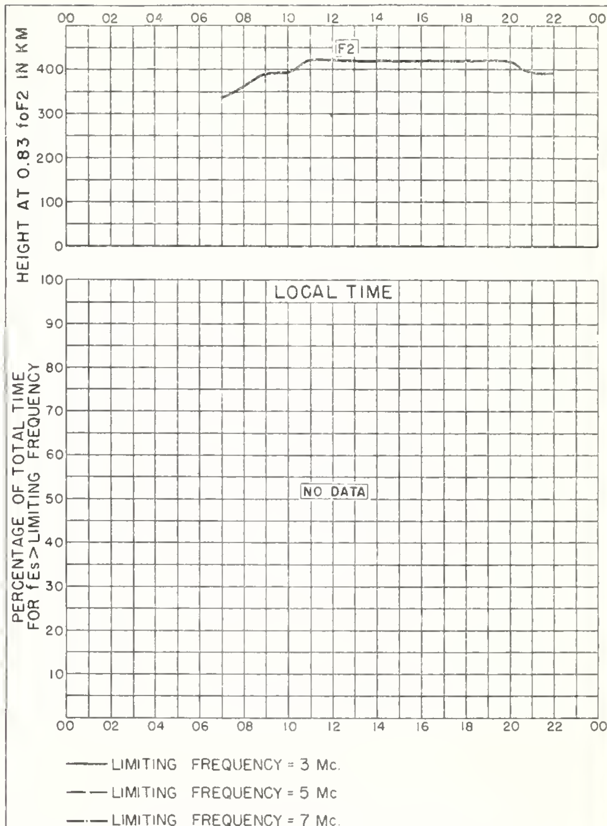

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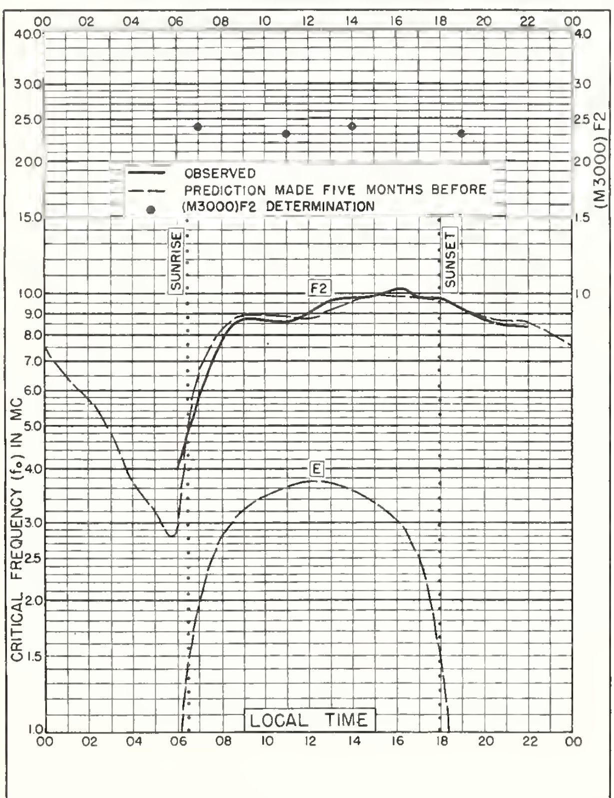

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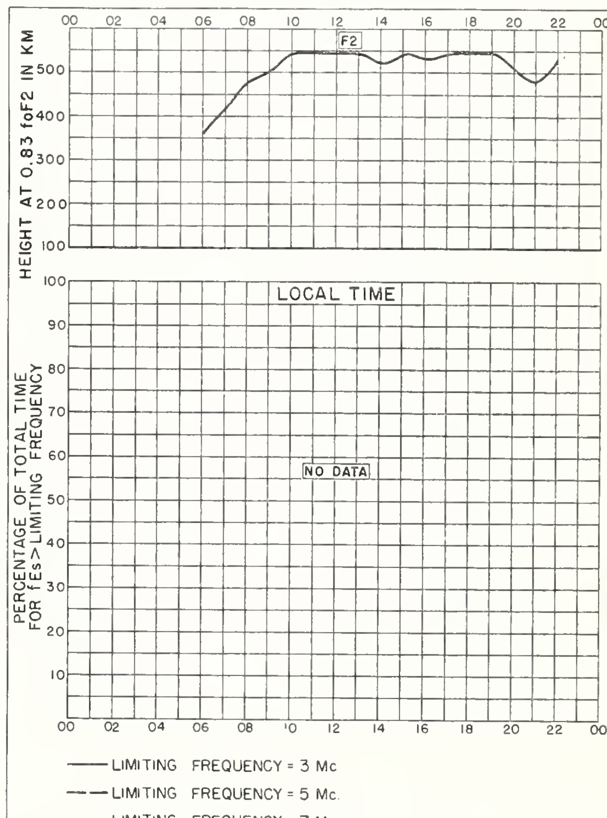

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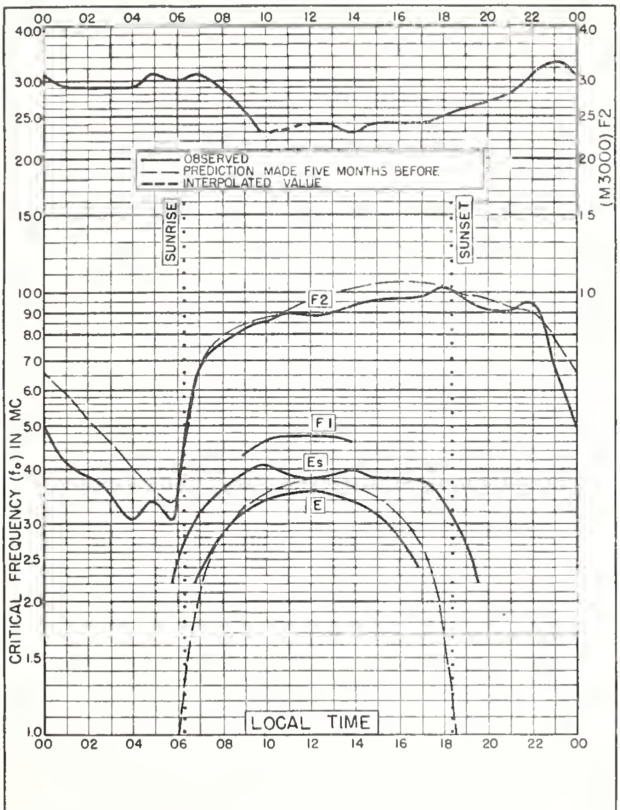

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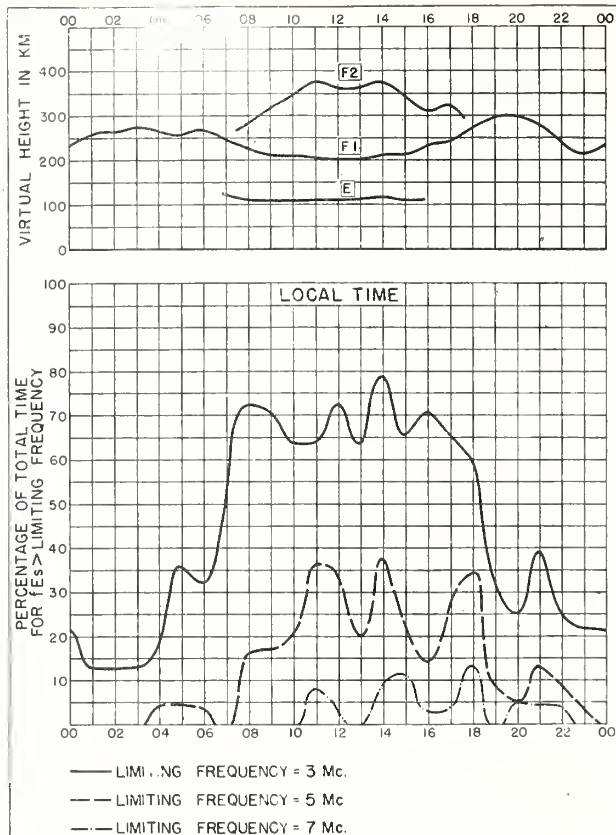

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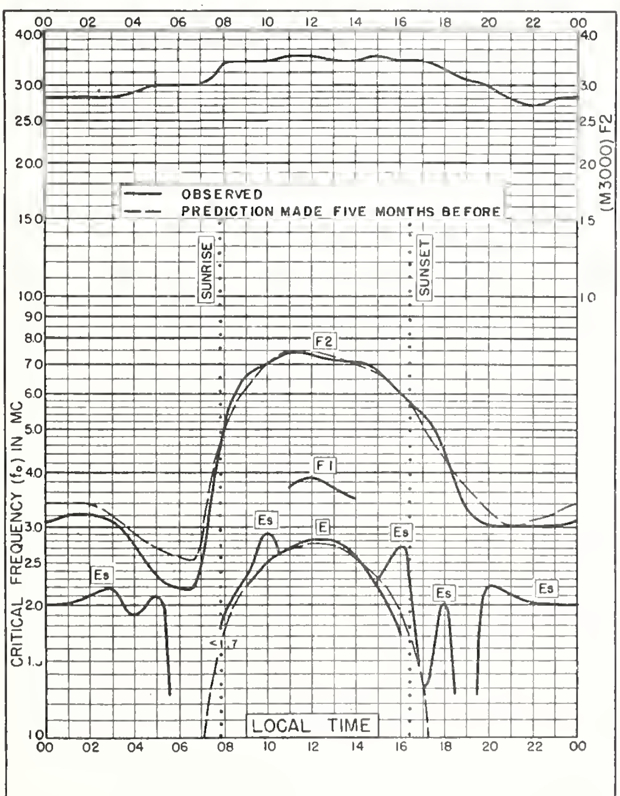

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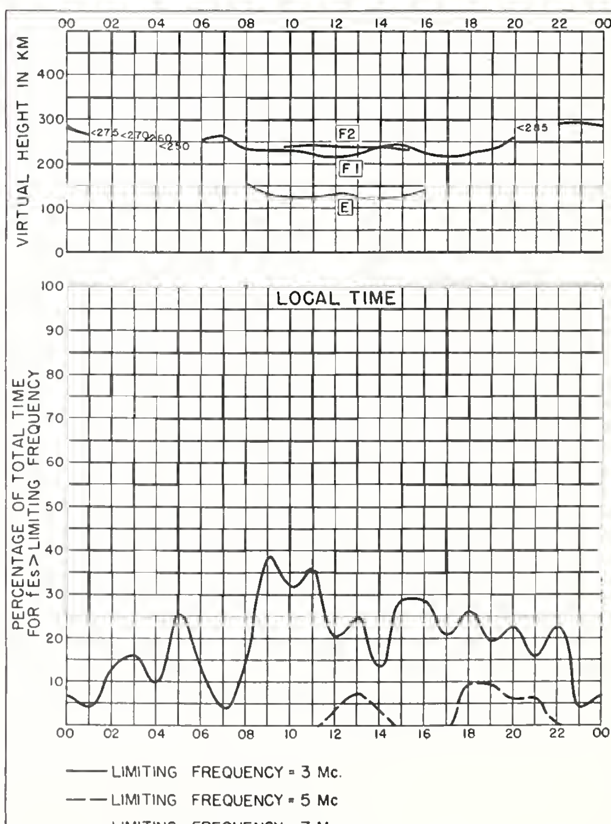

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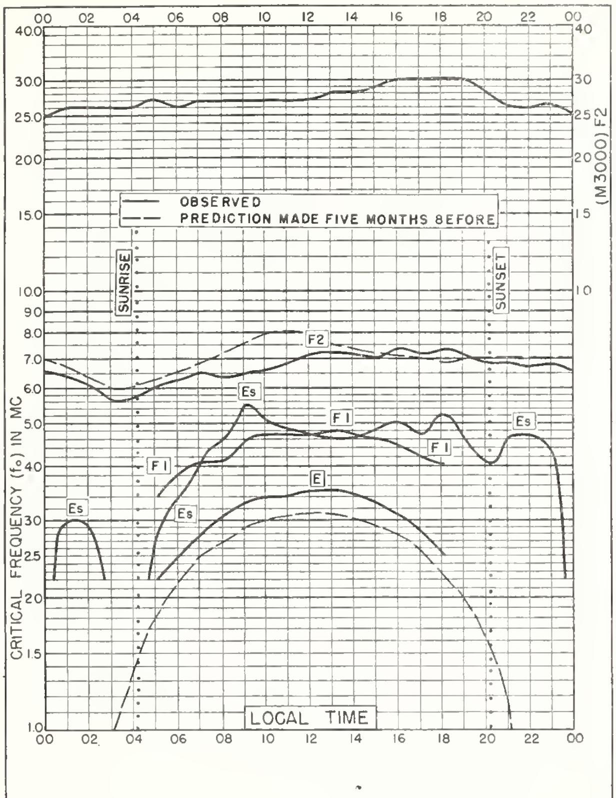

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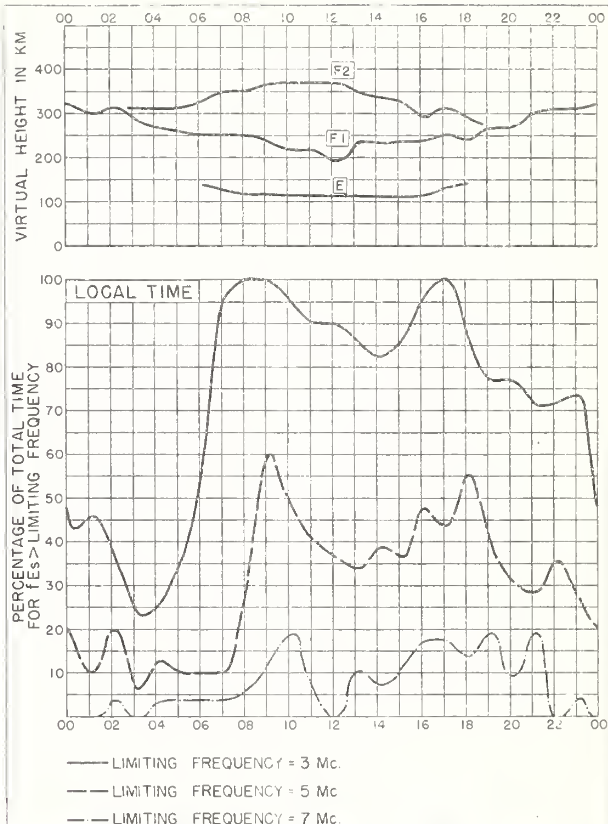

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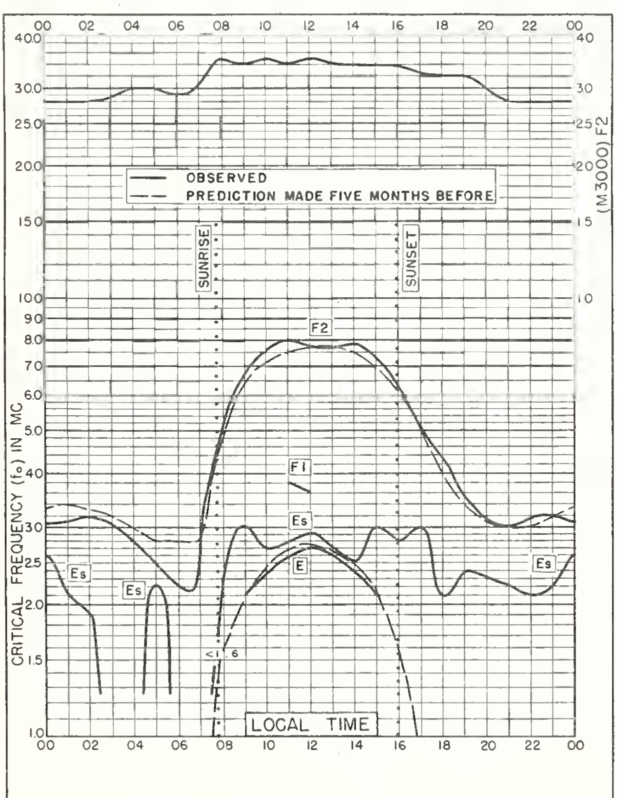

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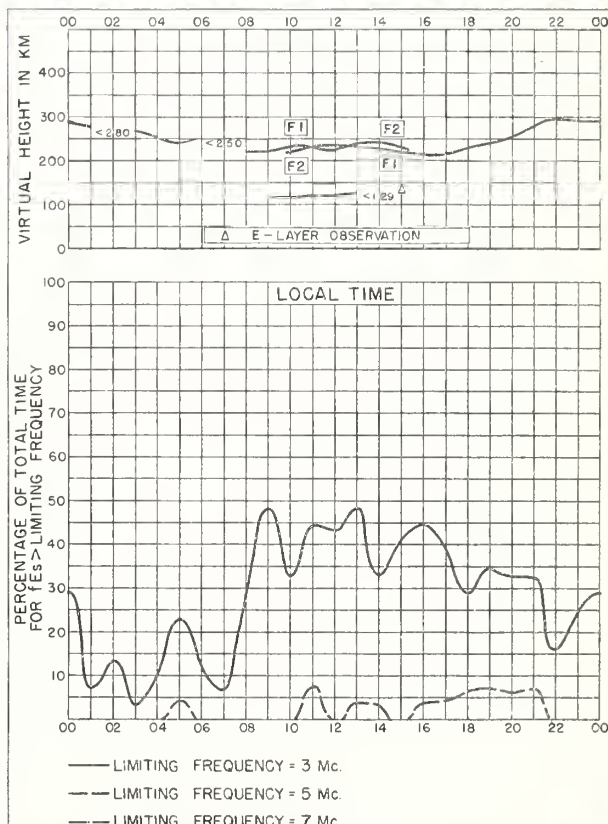

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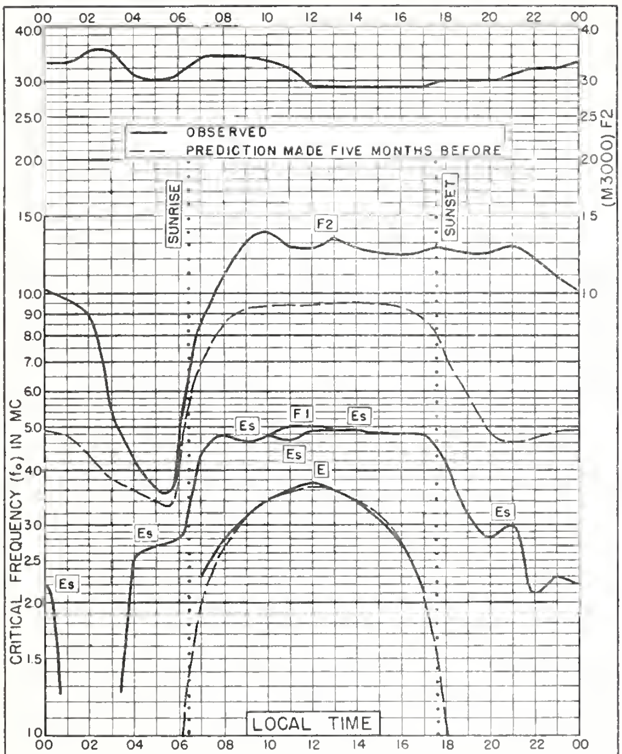

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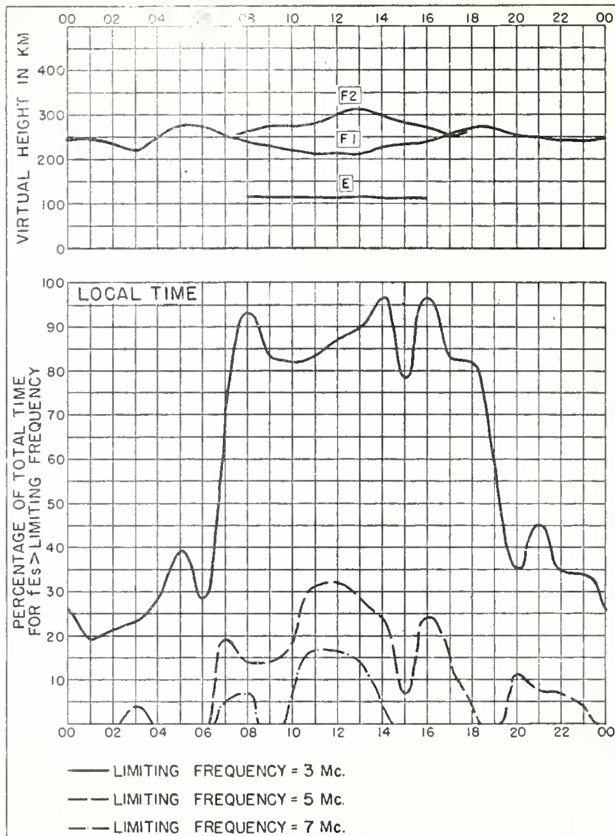

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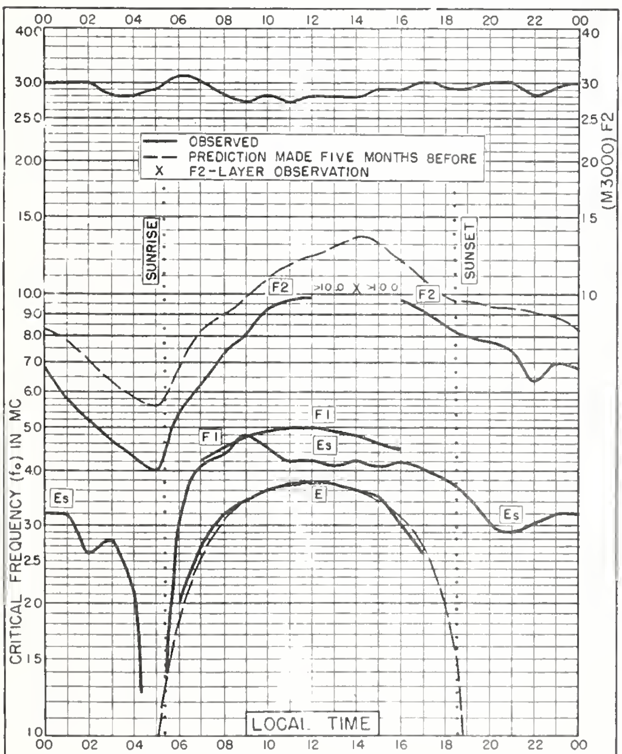

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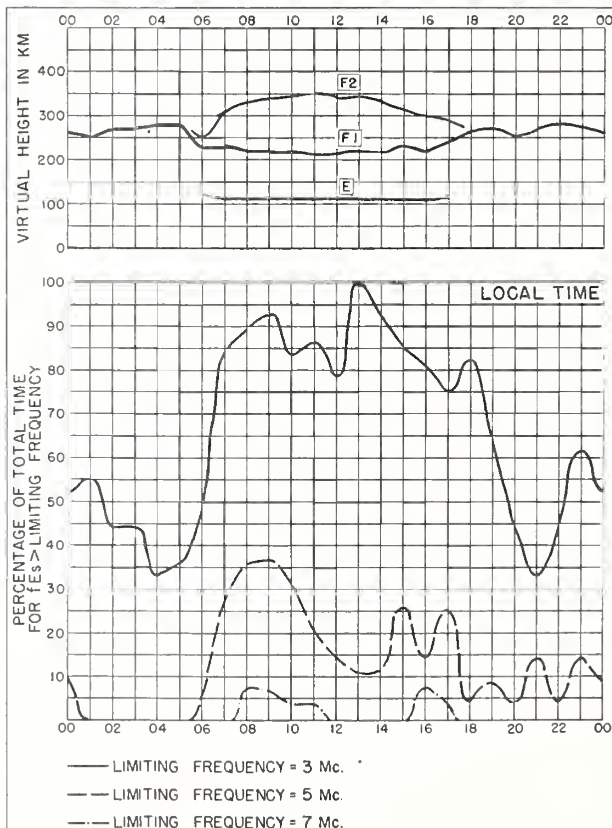

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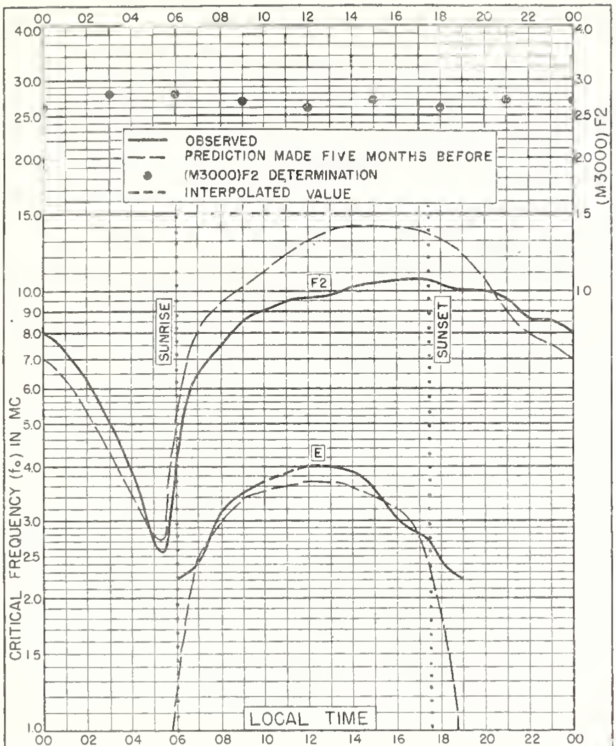

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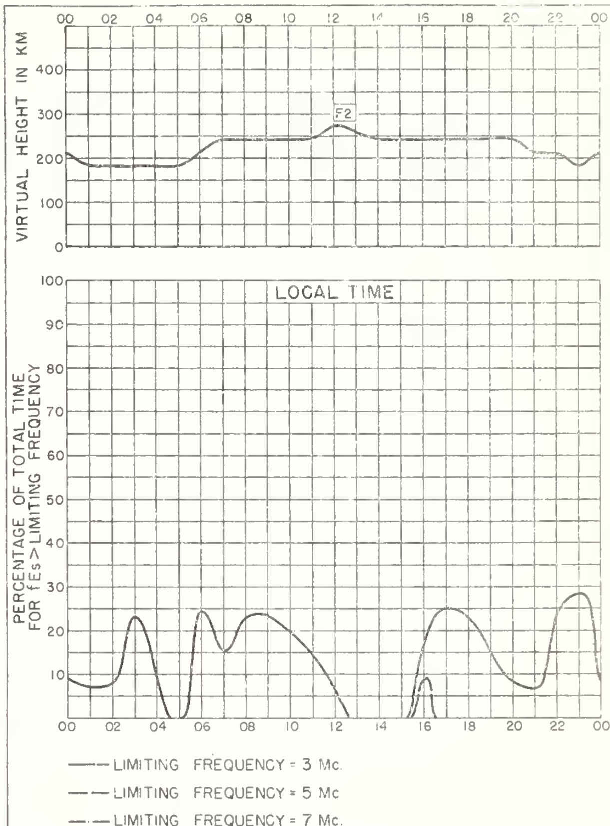

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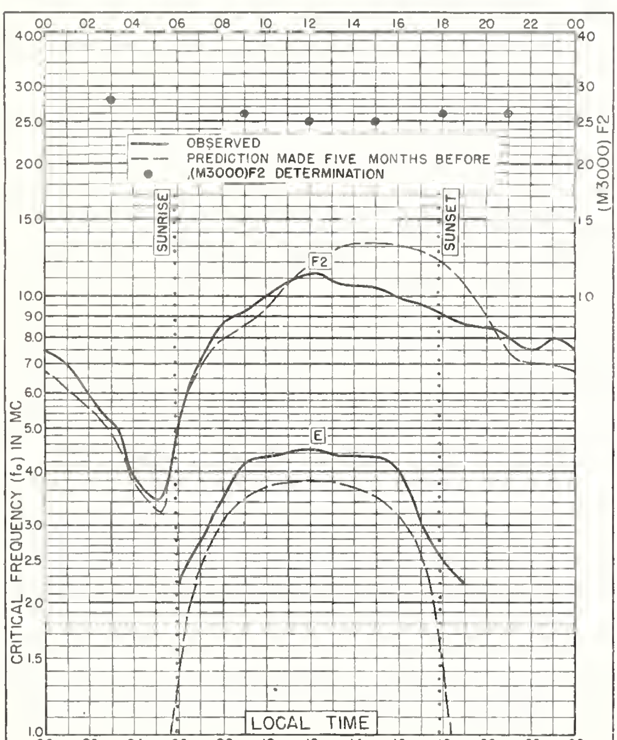

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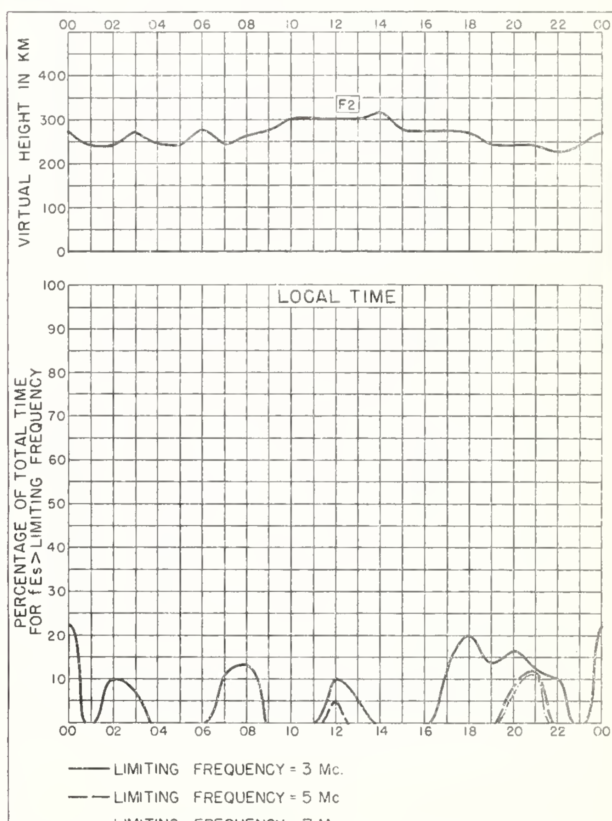

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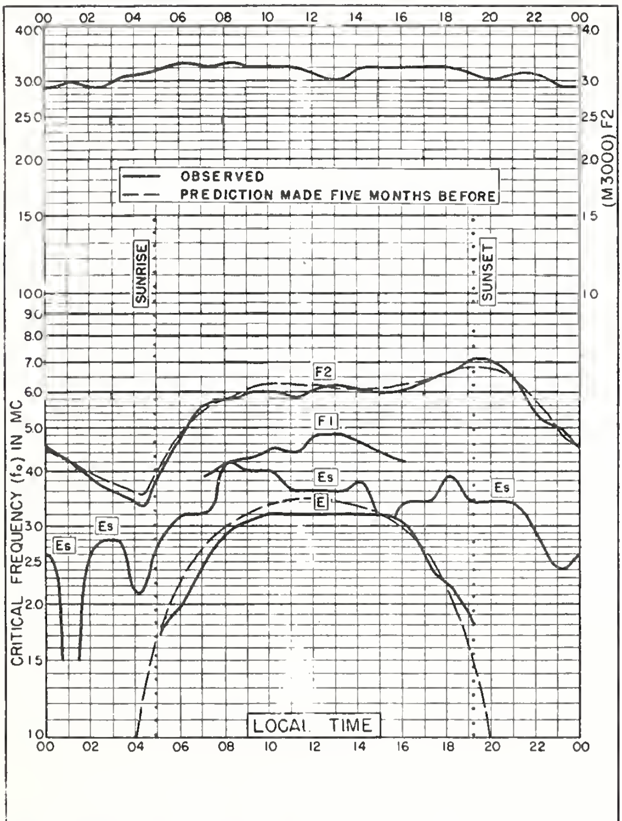

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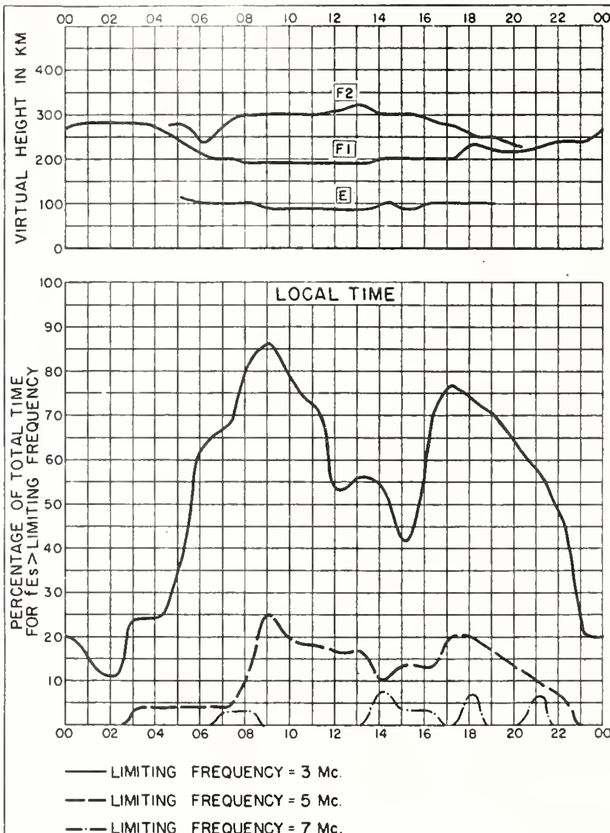

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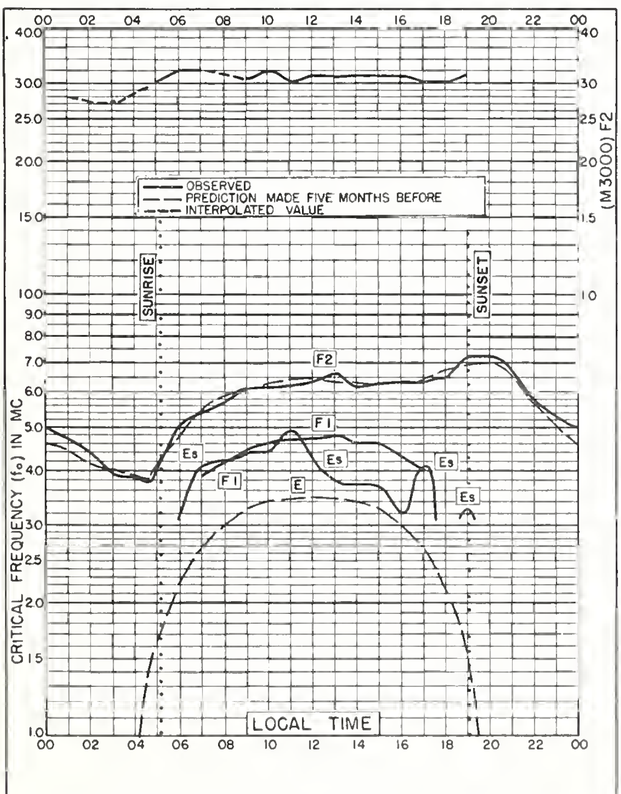

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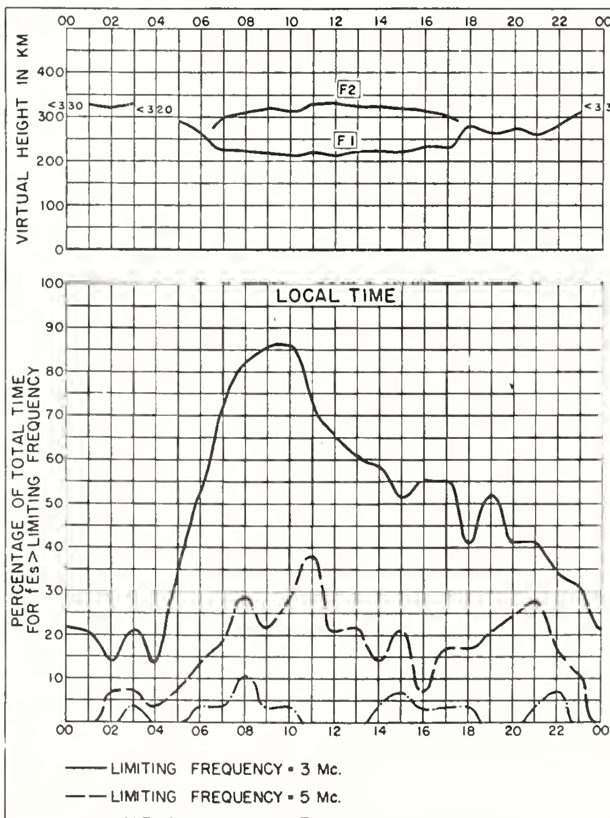

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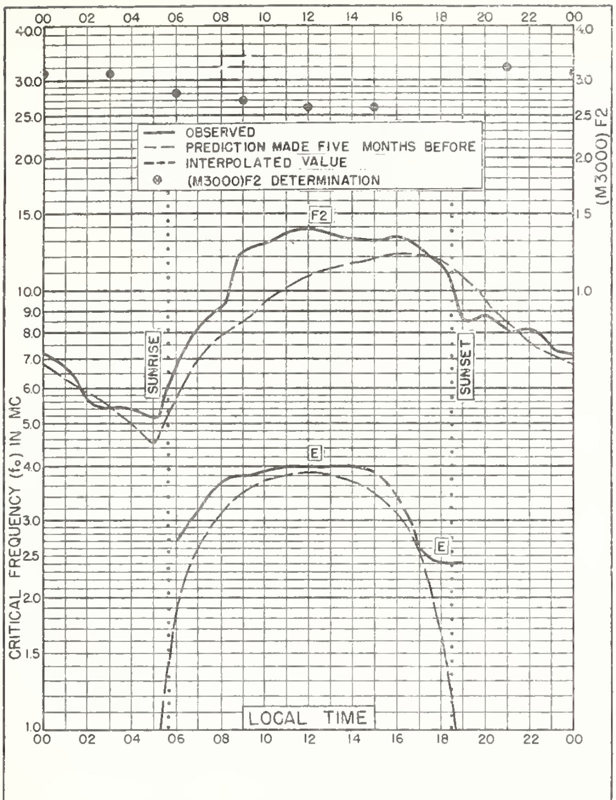

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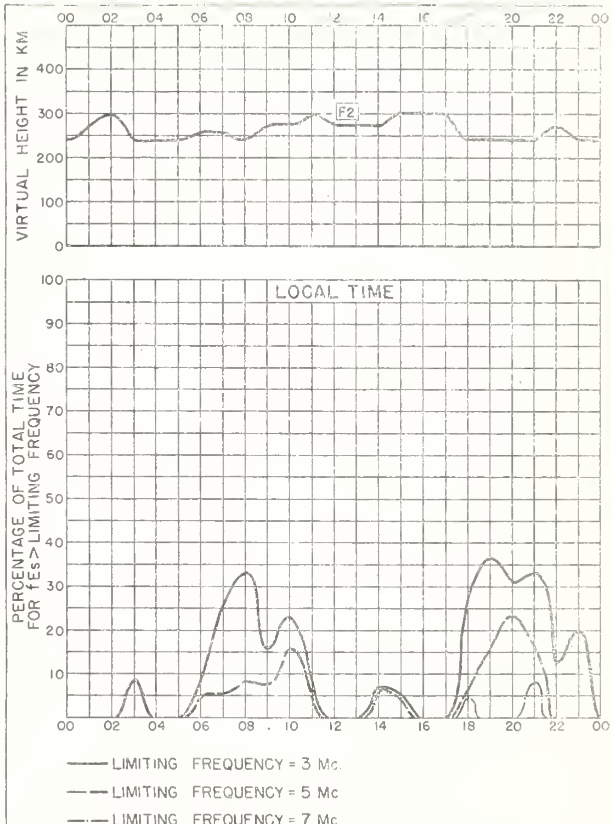

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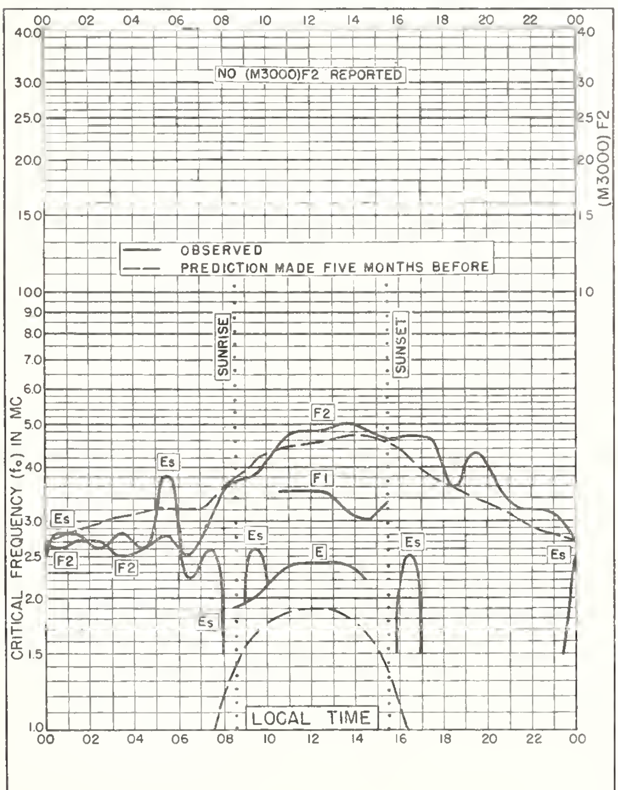

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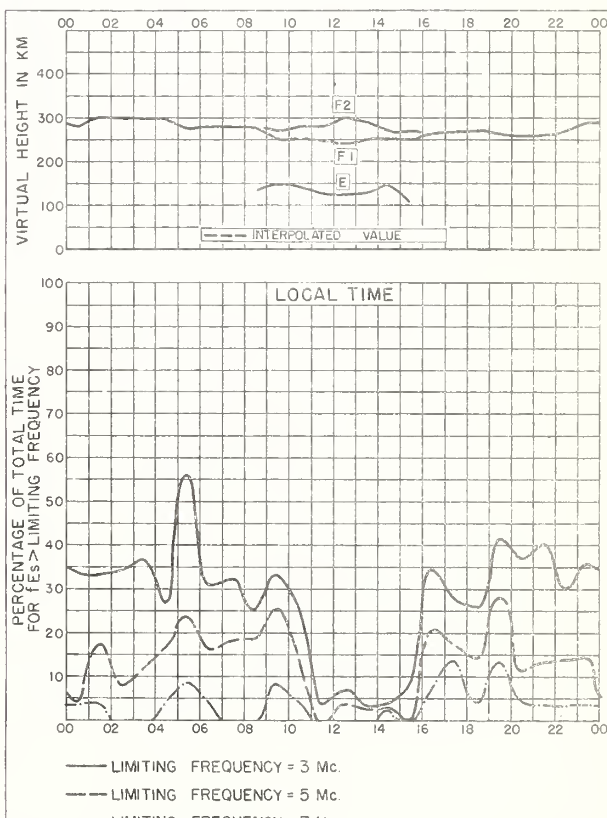

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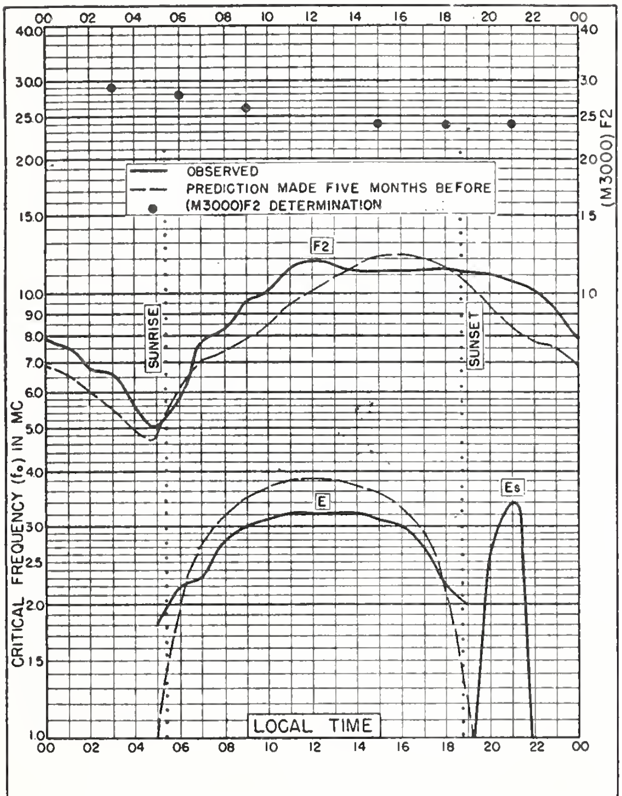

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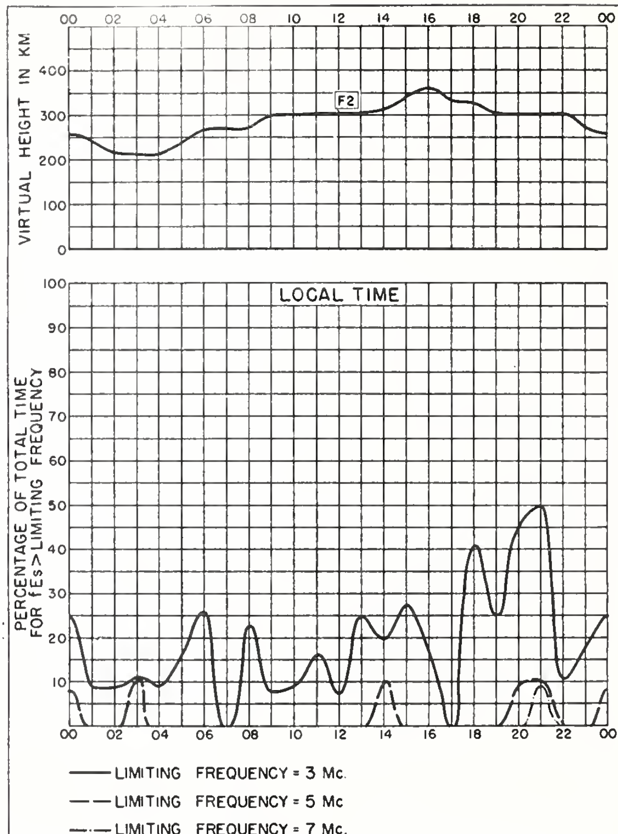

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Radio disturbance warnings, every half hour from broadcast station WWV of the National Bureau of Standards.
Telephoned and telegraphed reports of ionospheric, solar, geomagnetic, and radio propagation data.

Weekly:

CRPL—J. Radio Propagation Forecast (of days most likely to be disturbed during following month).

Semimonthly:

CRPL—Ja. Semimonthly Frequency Revision Factors For CRPL Basic Radio Propagation Prediction Reports.

Monthly:

CRPL—D. Basic Radio Propagation Predictions—Three months in advance. (Dept. of the Army, TB 11–499–, monthly supplements to TM 11–499; Dept. of the Navy, DNC 13 ( ) series; Dept. of the Air Force, TO 16-1B-2 series.)
CRPL—F. Ionospheric Data.
*IRPL—A. Recommended Frequency Bands for Ships and Aircraft in the Atlantic and Pacific.
*IRPL—H. Frequency Guide for Operating Personnel.

Circulars of the National Bureau of Standards:

NBS Circular 462. Ionospheric Radio Propagation.
NBS Circular 465. Instructions for the Use of Basic Radio Propagation Predictions.

Reports issued in past:

IRPL—C61. Report of the International Radio Propagation Conference, 17 April to 5 May 1944.
IRPL—G1 through G12. Correlation of D. F. Errors With Ionospheric Conditions.
IRPL—R. Nonscheduled reports:
R4. Methods Used by IRPL for the Prediction of Ionosphere Characteristics and Maximum Usable Frequencies.
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T2. Radar coverage and weather. (Superseded by JANP 102.)
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